

SMITHSONIAN ZOOgner

WINTER 2015-2016

From family planning to baby proofing, only the best will do for the Zoo's smallest, cutest, and most precious residents.

BRINGING UP baby

- » Explore the Reptile Discovery Center.
- » Meet the fishes of Amazonia.
- » Sign up for a summer of fun with Summer Safari and Nature Camp!



Good day.

Great day.

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FEATURES

MEHGAN MURPHY/NZP

Bringing Up Baby

Zoo babies need no car seats or diapers or high chairs, but they do require an abundance of planning and care and attention—just like human babies! Discover how the Zoo cares for its youngest residents, from family planning to baby proofing.

BY BRITTANY STEFF

20 There Be Dragons Here

BY KATHARINE SUCHER

Venture into the realm of dragons and serpents and cold-blooded creatures of mystery and beauty with a tour of the Zoo's Reptile Discovery Center.

FONZ 2016 Wall Calendar

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SMITHSONIAN Zoogoer



is the dedicated partner of the Smithsonian's National Zoological Park. FONZ provides exciting and enriching experiences to connect people with wildlife. Together with the Zoo, FONZ is building a society committed to restoring an endangered natural world. Formed in 1958, FONZ was one of the first conservation organizations in the nation's capital.

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Smithsonian National Zoological Park is located at 3001 Connecticut Ave., N.W., Washington, D.C., 20008-2537. Weather permitting, the Zoo is open every day except December 25. For hours and other information on visiting the Zoo, go to nationalzoo.si.edu.

Membership in FONZ supports the animal care, conservation, and educational work of the Smithsonian's National Zoo. It also offers many benefits: a *Smithsonian Zoogoer* subscription, discounts on shopping and events, discounted or free parking, and invitations to special programs and activities. To join, call 202.633.2922, or visit fonz.org/join.

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Email: Zoogoer@si.edu

On the cover: Wattled cranes are among the many species being raised with care at the Zoo and the Smithsonian Conservation Biology Institute.

PHOTO BY MEHGAN MURPHY/NZP

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PROUD PARENTS

LIKE SO MANY OF YOU, I'VE EXPERIENCED THE ANXIETY, CHAOS, SLEEPLESS NIGHTS, HAZY DAYS, AND FUN OF PARENTING. From those watchful days of pregnancy when you worry about everything to those first few whirlwind months after the baby is born when you realize that your pregnancy concerns and joys were *nothing*, you've entered into a whole new universe of anxiety and watchfulness, excitement and love.

Parenting here at the Zoo isn't much different—except that it's the incredible animal care staff and FONZ volunteer behavior watchers who are on pins and needles as the pregnancy, birth, and critical early months unfold. A lot of joy, anxiety, science, intuition, teamwork, and solitary nights go into successfully breeding and raising endangered animals. And there are few places in the world more experienced at this than our own National Zoo and Smithsonian Conservation Biology Institute (SCBI).

Our cover story is dedicated to our animal babies. Some are fuzzy and cute, others are less so, but all are little miracles of Mother Nature, science, and the expert care of the Zoo and FONZ teams. I bet everyone's aware of our most famous new baby, Bei Bei, and I suspect many of you watched along with my family and me as his birth unfolded on the Panda Cam.

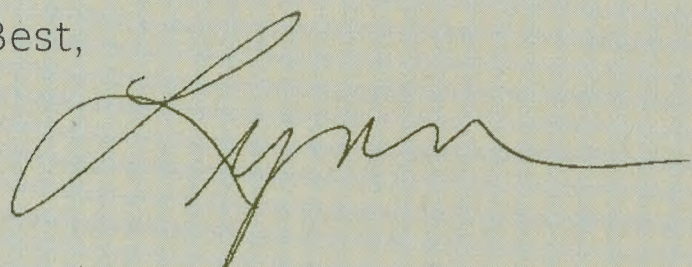
Bei Bei's birth was the result of intense cooperation by the Zoo, SCBI, FONZ behavior watch volunteers, world-leading Chinese panda conservation experts—and, of course, Mei Xiang, an incredibly devoted mother. I was blown away by the hours, dedication, blood, sweat, and tears from all sides.

Although Bei Bei is our most publicized new baby, there have been more than 285 births and hatchings at the Zoo and SCBI so far this year. In this issue, you'll learn about some of them, from crocodiles to cranes to ferrets. Winter is a great time to come to the Zoo and see some of these incredible little guys: Crowds are down, and there's a peacefulness and intimacy to the park that both adults and kids love.

Make sure you check out the new FONZ camps and classes schedule at the back of the issue. These sell out fast, so act quickly to give *your* incredible little guys an amazing learning experience at the Zoo or SCBI.

Hope to see you here soon!

Best,



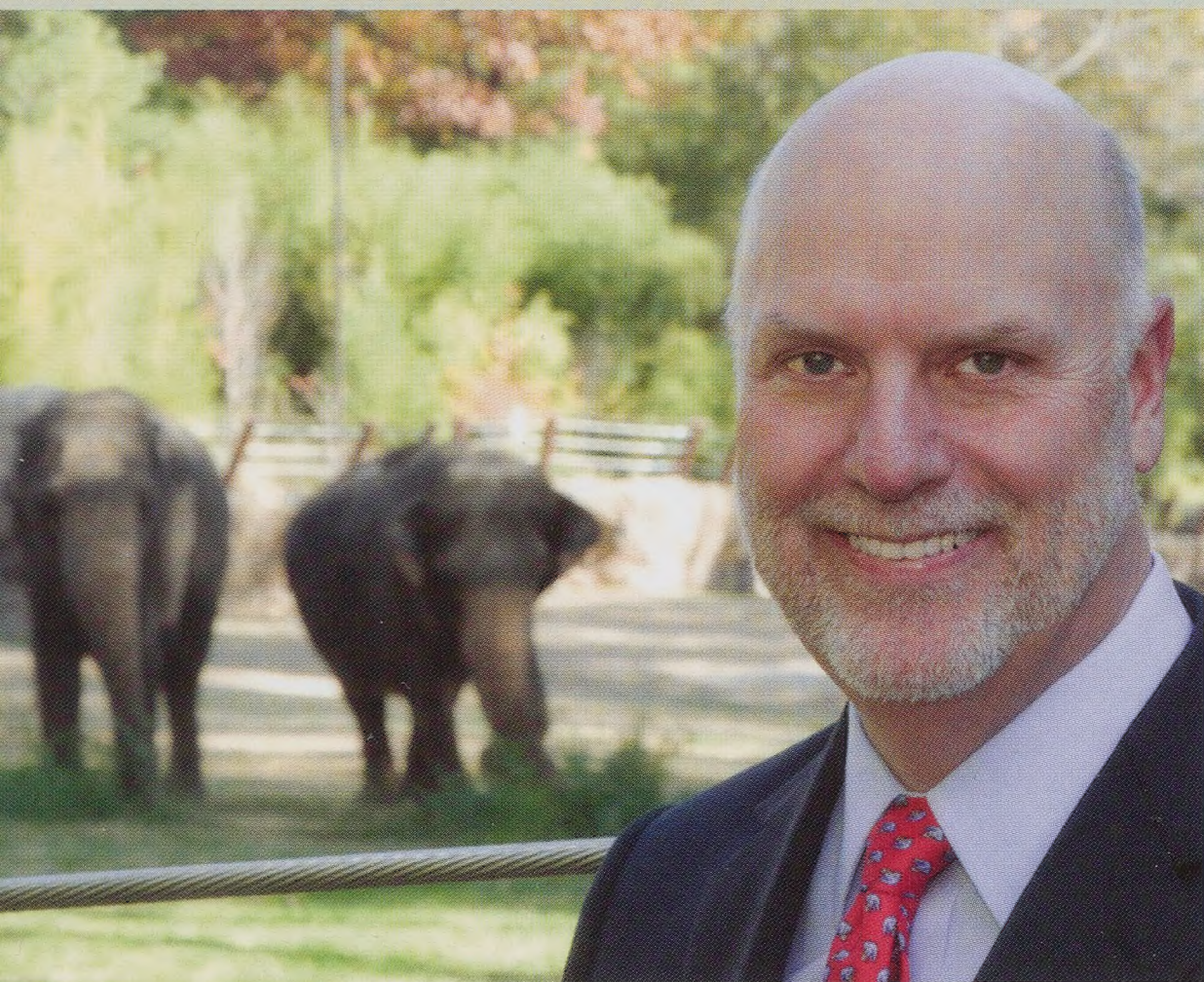
Lynn Mento

Executive Director, Friends of the National Zoo



COURTNEY SMITH/FONZ

GOING GLOBAL



MEGHAN MURPHY/NZP

“WHERE’S THE NATIONAL ZOO?” YOU’VE PROBABLY GOTTEN THAT QUESTION FROM OUT-OF-TOWN GUESTS.

The answer is much broader than you might imagine, extending far beyond our Rock Creek and Front Royal campuses. The breadth of the Zoo’s reach really struck me when I attended the World Association of Zoos and Aquariums conference in October. Presenter after presenter from around the globe talked about collaborating with Smithsonian scientists. I’d like to focus on a few of our international endeavors.

In the forests of Myanmar, scientists from the Smithsonian Conservation Biology Institute are working with partners to explore ways for villagers to live harmoniously with wildlife. One pilot project centers on providing cattle and veterinary care in the hope of reducing villagers’ need to hunt wildlife for food. The project team is also deploying camera traps: digital cameras equipped with sensors that detect an animal’s presence and prompt the camera to take a picture. These devices will provide much-needed insight into the area’s biodiversity.

SCBI scientists are also partnering with Myanmar’s Ministry of Environmental Conservation and Forestry to understand and address human-elephant conflict, a pressing concern in places where elephants foraging in fields can destroy a farmer’s livelihood in no time. The team uses satellites to track elephants’ movements, gathering data to shape strategies for reducing destructive clashes throughout the country.

In India, recent SCBI projects have underscored the vital importance of forest corridors between protected wildlife areas. As the human population grows and infrastructure expands, wildlife habitat becomes increasingly fragmented, which places isolated animal populations at risk of losing the genetic diversity needed for healthy survival. By studying fecal and hair samples, scientists tracked the movement of tigers, leopards, and sloth bears. Each species, they found, relies on forest corridors to move between reserves, breeding with a wide variety of partners and remaining genetically diverse. The findings buttress conservation biologists’ advocacy of protecting whole landscapes as well as individual reserves.

The grasslands of East Africa are home to a collaboration between SCBI and the Kenya Wildlife Service. One of the key foci of that partnership is health—both human and animal. Many of the diseases afflicting humans originated in animal populations, so scientists are keen to understand the health implications of humans’ interactions with wildlife and livestock. Monitoring wildlife health better equips researchers to predict and prevent potential pandemics.

Elsewhere in the world, SCBI scientists are researching the reintroduction of Przewalski’s horses in Mongolia and China, creating “insurance” populations of imperiled frogs in Panama, helping to breed clouded leopards in Thailand, identifying conservation priorities in Central African forests, using camera traps a hundred feet above the ground in Peru to study arboreal animals, charting how pollinators increase coffee yields in Costa Rica, and so much more.

So where’s the Smithsonian’s National Zoo and Conservation Biology Institute? More and more, the answer is “wherever wildlife needs us to be.”

Sincerely,

Dennis Kelly

Director, Smithsonian’s National Zoological Park

A BABY BROTHER FOR BAO BAO!

Just one day before her second birthday, Bao Bao became an older sister to a set of twins, born at 5:35 and 10:07 p.m. on August 22. The births of both cubs were captured on the Panda Cam, and Mei Xiang showed immediate signs of her strong maternal instinct.

In keeping with protocol for twin giant panda births, the Zoo's panda team removed one of the cubs for hand feeding. The plan called for swapping the cubs twice a day, allowing each to receive one-on-one attention from its mother while the other would be kept in an incubator

and fed by hand. This cub-swapping technique has been developed by panda experts in China over the past 15 years, and was most recently used by the Atlanta Zoo to raise their twin giant panda cubs in 2013.

Sadly, the smaller of Mei Xiang's two cubs died four days after birth. It had not been gaining weight, and a necropsy revealed pneumonia, likely caused by aspiration of food material. The cub was a male. Giant pandas give birth to twins about half of the time, but rarely raise both cubs to maturity.

Despite the loss of its little sibling, the second cub continued to thrive. Genetics testing revealed the cub's gender—male—and proved that Tian Tian is the father of both cubs (Mei Xiang had been inseminated with sperm from two male pandas, Tian

Tian and Hui Hui). At four-and-a-half weeks of age, the cub weighed 2.95 pounds—more than either of his older siblings at that age; Bao Bao was about 2 pounds and Tai Shan was 2.6 pounds.

Then, on September 25, the Zoo's littlest giant panda received a very big visit. First Lady Michelle Obama joined Peng Liyuan, the first lady of the People's Republic of China, to name the cub. Like big sister Bao Bao, the cub's name—Bei Bei—means “precious treasure.” An apt name for such an adorable and important little bundle of black and white fur.

Bei Bei and his mother will remain off exhibit for some time. The cub's public debut will likely come sometime after the new year, and will feature a special FONZ member preview. Be sure to check your FONZ emails for information about this very special event. Not sure whether you're signed up for FONZ member updates via email? Confirm your subscription here: fonz.org/emailsignup

In the meantime, follow FONZ's #PandaCamPix feed on Facebook, Twitter, and Instagram for updates and photographs.

Smithsonian
National Zoological Park
Conservation Biology Institute

SMITHSONIAN'S NATIONAL ZOO



SHELLIE PICK/NZP



\$4.5 Million to Support Giant Panda Research

David M. Rubenstein has pledged \$4.5 million to the Smithsonian's National Zoo and Conservation Biology Institute, funding its giant panda research and conservation program through the end of 2020. The gift will support conservation efforts in China, research on giant panda reproduction, professional training programs, upgrades to the giant panda habitat at the Zoo, care for the pandas at the Zoo, and public education about the species and its conservation.

Read more online:
fonz.org/pandagift



MEGHAN MURPHY/NZP

New Zoo Hours

Effective January 1, 2016, the gates to the Smithsonian's National Zoo will open daily at 8 a.m. and all buildings will open at 9 a.m., except the Bird House and Amazonia, both of which will open at 10 a.m. During the winter months (October 1–March 14) the buildings will close at 4 p.m. and the gates will close at 5 p.m. During the summer months (March 15–September 30), the buildings will close at 6 p.m. and the gates will close at 7 p.m.



ADRIENNE CROSIER/NZP

BASHFUL CHEETAHS?

In a recent scientific paper, Smithsonian Conservation Biology Institute (SCBI) scientists share a surprising discovery: male cheetahs produce more healthy sperm when housed off exhibit, such as at SCBI. Biologists do not yet know why sperm production declines when male cheetahs are visible to crowds, as they would be in a zoo exhibit, but stress may be a factor. “Cheetahs tend to like things to be familiar and consistent,” explains SCBI biologist Adrienne Crosier. “Long-term exposure to an ‘unpredictable’ routine may trigger stress in individual cheetahs and, ultimately, reduce their reproductive capacity.”

These findings suggest that zoos might increase their breeding successes with cheetahs by housing their reproductive animals in secluded facilities. The Smithsonian's National Zoo and Conservation Biology Institute already follows this practice—at this time only bachelor males are housed at the Zoo, with the remainder living at an 8.5-acre facility at SCBI. This is one of many ways that SCBI's relative seclusion helps support the conservation and breeding of endangered species.

Read more online: fonz.org/bashfulcheetahs



AMY ENCHELMEYER/NZP

FIVE Critically Endangered Cuban Crocodiles

After approximately two-and-a-half months of incubation, five Cuban crocodiles hatched at the Zoo's Reptile Discovery Center during the nine-day period of July 29 through August 7. This represents the best breeding success for these critically endangered crocodiles in the Zoo's history. The baby crocodiles remain behind the scenes, but visitors can see the hatchlings' parents—Dorothy and Jefe—on exhibit with adult females Blanche and Rose at the Reptile Discovery Center.

Learn more online:
fonz.org/fivecubancrocs

NEW EXHIBIT: Corals

Beautiful, exotic, and perilously endangered, the world's coral reefs support an almost unbelievable diversity of life. Marvel at the colors and shapes of these incredible invertebrates while learning about the Zoo's work to protect and preserve coral reefs around the world at the new coral exhibit in Amazonia.

Read the 2015 *Zoogoer* feature article about coral to learn more: fonz.org/modernark

Better Viewing for Clouded Leopards

The clouded leopard enclosure along Asia Trail received a subtle but

substantial upgrade: the mesh window was painted to improve visibility. The change makes the clouded leopard easier to see, and will allow for better photography opportunities for camera-toting visitors.

NEW EXHIBIT: Jewels of the Appalachia

Venture into the realm of mysterious and wonderful with the Zoo's newest exhibit in the Reptile Discovery Center: Jewels of the Appalachia. This mixed-species exhibit gives visitors an opportunity to see salamanders up close in a naturalistic replica of the mountain stream habitat favored by many of these unusual amphibians in the Appalachian Mountains. Made possible through the sponsorship and fundraising support provided by The Nature Conservancy and the FONZ volunteer Salamander Ambassadors.

Read the 2015 *Zoogoer* feature article about salamanders:
fonz.org/denizensofthedamp



BRIAN GRATWICKE/NZP

Ferret Kits from Long-Frozen Sperm

Usually, the making of baby animals requires two living parents. While scientists have developed techniques for using frozen sperm in some species, the technology is most often limited to recently-frozen sperm. Recent successes with ten- to twenty-year-old frozen black-footed ferret sperm show that even long-frozen sperm can produce viable offspring. Since 2008, biologists at



VICTORIA LAKE/NZP

SCBI have successfully impregnated female black-footed ferrets with sperm samples frozen for 10-20 years, producing healthy kits, many of which have gone on to bear kits of their own.

"Our findings show how important it is to bank sperm and other biomaterials from rare and endangered animal species over time," said Paul Marinari, senior curator at SCBI, explaining that such frozen samples could be used to rapidly preserve genetic information from numerous individuals within endangered or otherwise priority populations. "These 'snapshots' of biodiversity could be invaluable to future animal conservation efforts, which is why we must make every effort to collect, store, and study these materials now."

Read more online:

fonz.org/frozenferretsperm

Fond Farewells

It's with mixed emotions that the Smithsonian's National Zoo bids farewell to several well-loved animals, all born at the Zoo. While they will be missed here, their departures often mean the opportunity for them to meet potential mates and perhaps produce babies of their own. Biggest among these is Kandula, the male Asian elephant born in 2001. He departed for the Oklahoma City Zoo on October 20. Sukacita the tiger moved on from the Great Cat Exhibit to Dallas Zoo on September 16. And Nicole the Andean bear left for Queens Zoo in June. Best wishes to them all!



AMY ENCHELMAYER/NZP

Introducing the Golden Wolf to the World

The African golden wolf—native to northern and eastern Africa—is the first new species of canine for Africa in more than 150 years. Biologists—including SCBI geneticist Klaus-Peter Koepfli—relied upon genetic analysis of mitochondrial DNA to prove that the African golden wolf is actually a distinct species from the Eurasian golden jackal, despite the longstanding belief that the two species were one. In fact, genetic evidence suggests that African golden wolves may be more closely related to gray wolves than the neighboring Eurasian golden jackal. No golden wolves live at the Zoo, but two gray wolves can be seen on American Trail.

STANLEY CRANE CHICKS ON EXHIBIT

The Bird House celebrated the hatching of a pair of Stanley crane chicks this past summer. At present, the Zoo is the only member of the Association of Zoos and Aquariums to be regularly and successfully breeding these vulnerable birds. Both chicks are now on exhibit at the Bird House.

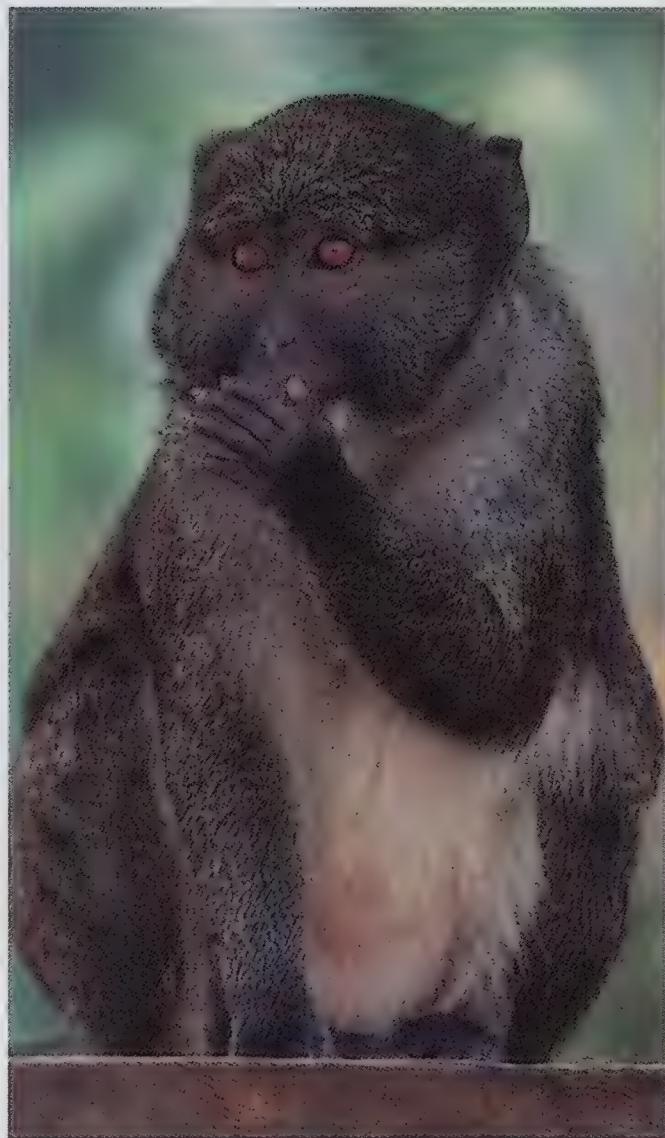
New to the Zoo

The summer and fall of 2015 brought several exciting additions to the Smithsonian's National Zoo.

At the Think Tank, visitors can see two species of guenons—small monkeys from Africa—living together in a mixed-species exhibit. The group includes four Allen's swamp monkeys—male Nub Armstrong and females Layla, Kinah, and Deiriai—and three Schmidt's red-tailed monkeys—male Tiko and females Indi and Chi Chi. More than 20 different species of guenons can be found throughout Africa.

Along American Trail, visitors will meet Jetty the sea lion, and Chloe the beaver. Jetty—the only male within the Zoo's group of sea lions—is getting along well with females Sidney, Callie and Summer. Chloe joins the Zoo's two male beavers in their exhibit

space uphill from the seal and sea lion pool. The arrivals of both Jetty and Chloe mean the Zoo may eventually be celebrating the births of sea lion pups and beaver kits.



JANICE SVEDA/FONZ PHOTO CLUB



CHELSEA GRUBB/NZP



JANICE SVEDA/FONZ PHOTO CLUB

Mark Your Calendar

- Nov. 27 **ZooLights, Powered by Pepco—**
 –Jan. 2: Come enjoy live music, tasty winter treats, a dazzling light show, and more than 500,000 environmentally-friendly LED lights as they transform the Zoo into a winter wonderland.
FREE — fonz.org/zoolights
ZooLights will be closed December 24, 25, and 31. Enjoy your holidays!
- Jan. 26: **Priority Camp Registration for Premier+ Members—**FONZ Premier+ members get first access to camp registration for Nature Camp and Spring and Summer Safari Day Camps. Registration begins at 10 a.m. | **fonz.org/camps**
Upgrade your membership to Premier+ to qualify for priority registration. fonz.org/join
- Feb. 2: **Camp Registration for All Members—**
 FONZ members enjoy discounts for Nature Camp and Spring and Summer Safari Day Camps. Registration begins at 10 a.m. online: **fonz.org/camps**

Forest Giants Suffer Greatly in Drought

Recent research led by biologists from the Smithsonian Conservation Biology Institute (SCBI) shows that the biggest trees in the forest are also the most vulnerable to stress from drought.

As climate change causes the world to warm, forests everywhere will experience more severe droughts. "This year is the hottest on record, and there are currently droughts all over the world, including the record-breaking drought in the western United States," said Anderson-Teixeira, senior author on the study. "Trees will die, particularly the larger ones."

This impacts more than trees. Because the biggest trees often provide the most food and shelter, their disappearance may have a dramatic impact on forest-dwelling wildlife around the world.

Read more online: **fonz.org/forestgiants**



BRINGING UP baby

BRITTANY STEFF

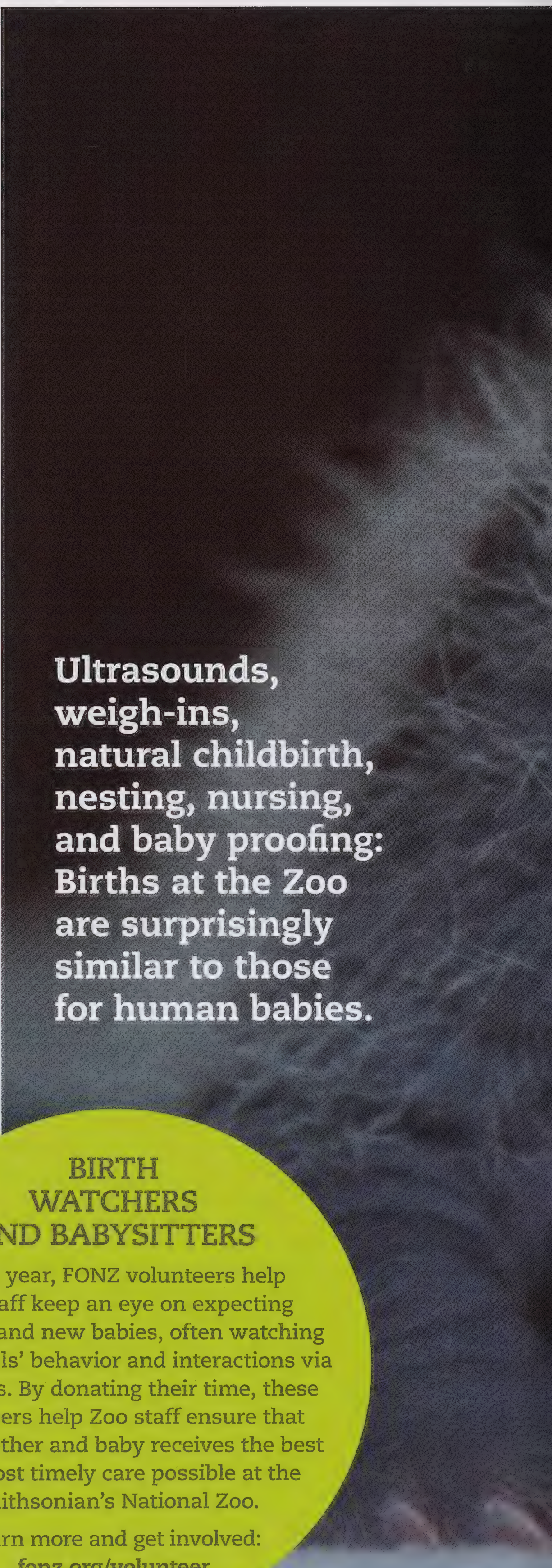
It's a tale as old as time. A couple decides to have a baby. They cease contraception and watch hopefully for signs of a ripening pregnancy, tracking the mother's weight and making sure she gets prenatal care.

Once the bundle of joy arrives, there's an adjustment period for everyone involved. The baby gets checkups. The parents alter their environment to be safer for the baby, and begin teaching the baby how to be a human.

While the babies at the Zoo have scales, fuzz, or feathers rather than sweet-smelling baby skin, the stories of their births are strikingly similar.

The Nesting Instinct

Preparation for birth begins before the babies are anything more than a twinkle in the eye. Animal care staff make plans and talk through scenarios. In most, if not all cases, a husbandry manual and a breeding protocol already exist: documents that are shared across Association of Zoo and Aquarium (AZA) accredited institutions.



Ultrasounds, weigh-ins, natural childbirth, nesting, nursing, and baby proofing: Births at the Zoo are surprisingly similar to those for human babies.

MEHGAN MURPHY/NZP

BIRTH WATCHERS AND BABYSITTERS

Every year, FONZ volunteers help Zoo staff keep an eye on expecting mothers and new babies, often watching the animals' behavior and interactions via webcams. By donating their time, these volunteers help Zoo staff ensure that every mother and baby receives the best and most timely care possible at the Smithsonian's National Zoo.

Learn more and get involved:
fonz.org/volunteer



Bei Bei, the Zoo's baby giant panda, was born to third-time mom Mei Xiang on August 22, 2015. His birth represents the culmination of months of planning and preparation by veterinarians, curators, keepers, and volunteers.

BRINGING UP baby



Zoo veterinarians and animal care staff use ultrasound to look for signs of pregnancy and track fetal development in a range of animals, many of which have been trained to voluntarily hold still for the non-invasive exam. Here, Mei Xiang allows veterinarian James Steeil and veterinarian technician Sherri Diviband to perform an ultrasound on June 9, 2015. A later ultrasound revealed the fetus shown to the right.



DEVIN MURPHY/NZP

In species where the males and females don't live together year round, such as the sand cats, fishing cats, tigers, and sloth bears, the first step is allowing the couple access to each other. In other cases, such as lions, orangutans, gorillas, seals, and sea lions, it's a matter of ceasing contraception.

Some animals—such as some reptiles, amphibians, and birds—breed every year at the same time. For others, setting the mood can require a bit more work. For example, some species of reptiles and amphibians need environmental cues to breed, which can include changing amounts of sunlight, rainfall, humidity, and other variables that scientists haven't begun to decode yet. According to Reptile Discovery Center keeper Lauren Augustine, getting them to breed can be more of an art than a science.

"We base their conditions on their natural history," Augustine says. "A lot of it is seasonality. We have skylights, so we get a natural daylight cycle. But we can vary humidity and temperature. When the barometric pressure is low, as it would be in the rainy season in many of these animals' natural habitat, we see an increase in eggs."

Animals can alter their own environments to prepare for babies, too. Most obviously, birds build nests. Often having access to the correct kinds of nesting supplies can both increase the chances of successful offspring and cement a pair's bond.

Crocodiles, like the critically endangered Cuban crocodiles that hatched this summer, make nests (often out of heaps of mulch and dirt) and so keepers make sure they have the nesting material they need.

Bears also nest. Giant panda Mei Xiang builds an enormous bamboo nest each year, and sloth and Andean bears both pad their dens with hay. Keepers line lion and tiger dens with special seedless hay, ensuring that the cubs have a safe, soft, warm place to be born.

Prenatal Care

As with humans, medical care is extremely important for expectant animal mothers. One of the most important aspects of confirming a pregnant mother's health is tracking her weight, which can give clues to her health and how far along she is in a pregnancy. Almost all Zoo animals are trained to be weighed frequently, giving keepers and veterinarians a baseline weight against which they can track pregnancy weight gain.

Unlike human mothers, though, zoo mothers don't often change their diet much during pregnancy. "Our animals' diets are already healthy enough to support them

Even more impressive, a strikingly large percentage of the Zoo's mammals cooperate for abdominal ultrasounds.

through a pregnancy," explains Zoo nutritionist Erin Kendrick. "We just make tweaks based on the individual's and species' needs."

That's not to say that diets don't vary at all. Birds may receive extra calcium to make up for the enormous amount they put into making eggshells, and orangutans and gorillas are often given the same kinds of prenatal vitamins that human mothers use.

Animal care staff may track an animal's hormones and immune system through blood draws. Many Zoo animals—not just mothers and prospective mothers—will voluntarily participate in a blood draw in exchange for appropriate compensation: a tasty treat.

Even more impressive, a strikingly large percentage of the Zoo's mammals cooperate for abdominal ultrasounds. The list includes lions, tigers, Andean bears, sloth bears, giant pandas, anteaters, orangutans, gibbons, gorillas, and even seals and sea lions. And this year, for the very first time, Zoo veterinarians saw a fetus on Mei Xiang's ultrasound three days before she gave birth to twins.

BRINGING UP baby

“Mei’s personality is just such that, during the last 20 days of a pregnancy or pseudo-pregnancy, she gets a little bit more reclusive, and more reluctant to participate in ultrasounds,” says Zoo head veterinarian Don Neiffer. “The day we got the images, nobody expected her to participate. She walked away three times. But then she came back, and we were ecstatic that we got images.”

Once something has been spotted on ultrasound, or once keepers have calculated a likely birth window, the animal care team goes on high alert.

Mothers on the verge of giving birth are often fractious and want peace, privacy, and quiet. Often keepers will give mothers a den or enclosure—or in the case of seals and sea lions, a pool—to themselves. Typically, this is in a quiet area off-exhibit and off-limits to non-essential personnel. Keepers often monitor these areas using webcams.

“We keep a close eye on expectant moms, especially first-time moms,” says Small Mammal House keeper Kenton Kerns. “We’re keeping everyone—the vets, the nutritionists, and the other keep-

ers—up to date all the time. The whole Zoo is always in tune with new babies. It’s a team effort.”

Mother Knows Best

Labor often seems to be a rude surprise for first-time mothers. But natural instinct kicks in, and labor is rarely as painful or as protracted as it is for humans.

Throughout the Zoo—whether you’re talking to people who work with elephant shrews or elephants, gorillas, gazelles, or gharials—the keepers all say the same thing. The best outcome is for the mother to raise the babies herself: with help from a mate, if she would have help in the wild; within a den if that’s what her wild cousins prefer; or with a laissez-faire approach if that’s biologically appropriate.

“Nothing can replace moms,” says head veterinarian Neiffer. “They have evolved and adapted to provide exactly the care and nutrition to best promote the baby’s mental and physical development.”

No one teaches a mother animal how to be a mom. They can’t read mommy blogs, and there is no “What to Expect” when you’re about to lay several thousand frog eggs. So animals mostly rely on instinct—which is a remarkably strong force. And social animals, such as the great apes, elephants, and lions, often learn from watching their mothers, sisters, or aunts raise their young.

Most of the mothers at the Zoo are remarkably successful, and only get more comfortable with each successful birth. But sometimes humans have to step in, however reluctant they are to do so. The Zoo always has a hand-rearing plan ready, just in case.

When sloth bear Khali abandoned her cub in December 2013, the animal care team swooped into action. They removed the surviving cub, a female later named Remi, and hand-reared it. Since wild sloth bears carry their cubs on their backs, keepers wore Remi around in a Moby wrap. When she grew large enough they put her next to, and then in with, other sloth bears so she could learn how to be a bear.

Keeping an animal secure in its own identity is of paramount importance. Happily, bears rarely strongly imprint on their



American flamingos are one of many bird species that routinely lay eggs and raise chicks in the Zoo’s Bird House.

MEGHAN MURPHY/NZP

When birds are hand-reared, keepers often put a mirror in with them. Their reflection appears to comfort them.

human handlers. With other animals, such as birds and great apes, maintaining that boundary is more difficult.

When birds are hand-reared, keepers often put a mirror in with them. Their reflection appears to comfort them—perhaps providing them with a sense of companionship when the keepers aren't with them—and also serves to remind the chicks that they are birds, not humans.

In other situations, mom might be the best at caring for a baby, but may not be able to provide the required nutrition. Nursing mothers get extra food and vitamins, but sometimes their breast milk supply just isn't large enough. Some animals, including the great apes, are trained to allow keepers or veterinarians to get a milk sample. This allows animal care staff to assess the mother's milk production, and confirm that she is producing enough to feed her young. The milk may also be added to the Zoo's milk bank—a stock of thousands of samples of milk that researchers use to study how the fats and nutrients in milk vary across species and to formulate milk replacers.

With gray seal mom Kara, pup Rona wasn't gaining enough weight. In the wild, gray seals only stay with their mothers for three weeks, so that nursing time needs to be jam-packed with calories from high-fat milk. Animal care staff worked hard to keep Rona with her mom—but also supplemented her nursing with a “formula” made mainly of powdered formula and fish oil.

The staff at Great Apes is prepared for a full range of baby-care intervention, if necessary. The keepers are hoping for an orangutan and/or gorilla baby within the next three years, and have already

established plans for having a surrogate mother care for a baby if the mother rejects it, bottle feeding a baby if it's not getting enough nourishment from breast milk, and hand-rearing the baby completely if necessary—but in an enclosure that would keep adult animals in view at all times, in an effort to remind the baby that she is a non-human ape.

The most recent example of hand rearing came with the birth of Mei Xiang's giant panda twins on August 22, 2015. In the wild, when giant panda mothers give birth to twins, only one survives. At the Zoo, when Mei Xiang unexpectedly gave birth to a second cub four hours

after the first, it was only the third time a giant panda in an American zoo had done so. The plan, as established by the giant panda Species Survival Program, is to keep one cub with the mother at all times, rotating which cub is in human and panda care, so that both cubs have the benefit of time with their mother.

Unfortunately, one of Mei Xiang's cubs was smaller than the other and had respiratory problems. Despite the care of a large and passionate team of experts, the cub died in one of the heartbreaking truths of birth: sometimes everyone can do everything right, and the birth can still end in an early death.



JESSIE COHEN/NZP

Kori bustard chicks are always raised by hand at the Zoo; a safeguard against predators. The chicks are often housed with mirrors, and appear to be comforted by the presence of their reflection.

BRINGING UP baby

TOP LEFT: Before they are allowed outdoors, each lion and tiger cub born at the Zoo must prove that it is strong enough to swim to the edge of the moat. This ensures the cubs' safety if they accidentally fall into the water while exploring their outdoor yards. Here, a lion cub is wrapped in a towel after successfully passing its swim test.

TOP RIGHT: Every lion and tiger swim test is carefully observed by their keepers, several of whom venture into the water with the cubs.

BOTTOM: All Zoo babies receive species-appropriate veterinary care. Here, a giant anteater cub is given an eye exam.



JENNIFER ZOO/NZP



MEGHAN MURPHY/NZP



MEGHAN MURPHY/NZP

Cub Care

A human baby is given a check-up almost immediately upon birth. For Zoo animals, that checkup is often delayed weeks or even months, and staff may not even know the sex of the babies.

In the wild, bears often stay with their cubs for months before leaving the den, though the exact time varies with species and individual preferences. Animal care staff often have to wait until the mother is comfortable leaving the cubs for short periods of time, then be ready to spring into action to weigh and sex the cubs, and have them back in the den before Mom gets worried about them.

Great cats leave their cubs earlier, and because of the close relationship the Zoo's cats have with their keepers, they often even bring their young up to mesh or windows for the keepers to see.

Before cubs can be allowed out on exhibit, animal care staff ensure the animals are healthy and will be safe outside. Keepers carefully go over their enclosures to look for any tiny gap or hole that young animals could slip through or any other potential hazards for the smaller animals.

Carnivores are all vaccinated against rabies. With the larger animals, keepers carefully cushion any potential places a baby could fall and, for the lions and tigers, conduct swimming tests to make sure the cubs know what to do if they fall into the water-filled moats that line their yards. Getting out of deep water is important for seals and sea lions too, and keepers install floats and ramps to be sure the rotund little pups can get out of the water.

"It's important for people to know that we do not approach our newborns with a broad brush," says Neiffer. "We consider the individual's and the species' needs. And the entire Zoo—the husbandry, nutrition, and veterinary teams—all work together."

The Zoo's goal is always to provide the best care for the individual animals—and for the species. Each birth, after all, isn't just a cute and cuddly addition to the family. It's a conservation success, and a step forward on the path to saving species. **SZ**

BRITTANY STEFF *is an editor for the Zoo's website and a veteran Smithsonian Zoogoer contributor.*

Animal care staff often have to wait until the mother is comfortable leaving the cubs for short periods of time, then be ready to spring into action to weigh and sex the cubs, and have them back in the den before Mom gets worried about them.



Rona, the gray seal pup, with her mother, Kara.

CHELSEA GRUBB/NZP

A photograph of a sloth bear standing behind a large, grey, textured rock. The bear has dark brown fur and a distinctive white patch on its snout. It is looking directly at the camera. The background is filled with dense green foliage, including ferns and other tropical plants. The overall scene is set in a natural, outdoor habitat.

Home Sweet Home

Lend a paw! Help make the sloth bears' home on Asia Trail even sweeter. We are building a new cave into their habitats. This cave will enhance the bears' home—improving their comfort and well-being. It will allow the bears to go outdoors year-round, sheltered from the elements. And the cave will give visitors an easy view of the bears, no matter what the weather. But we can't do it without you! Please send your most generous contribution today. With your help, we can reach our goal of \$120,000 and build a sweeter home for sloth bears on Asia Trail!



2016 CALENDAR

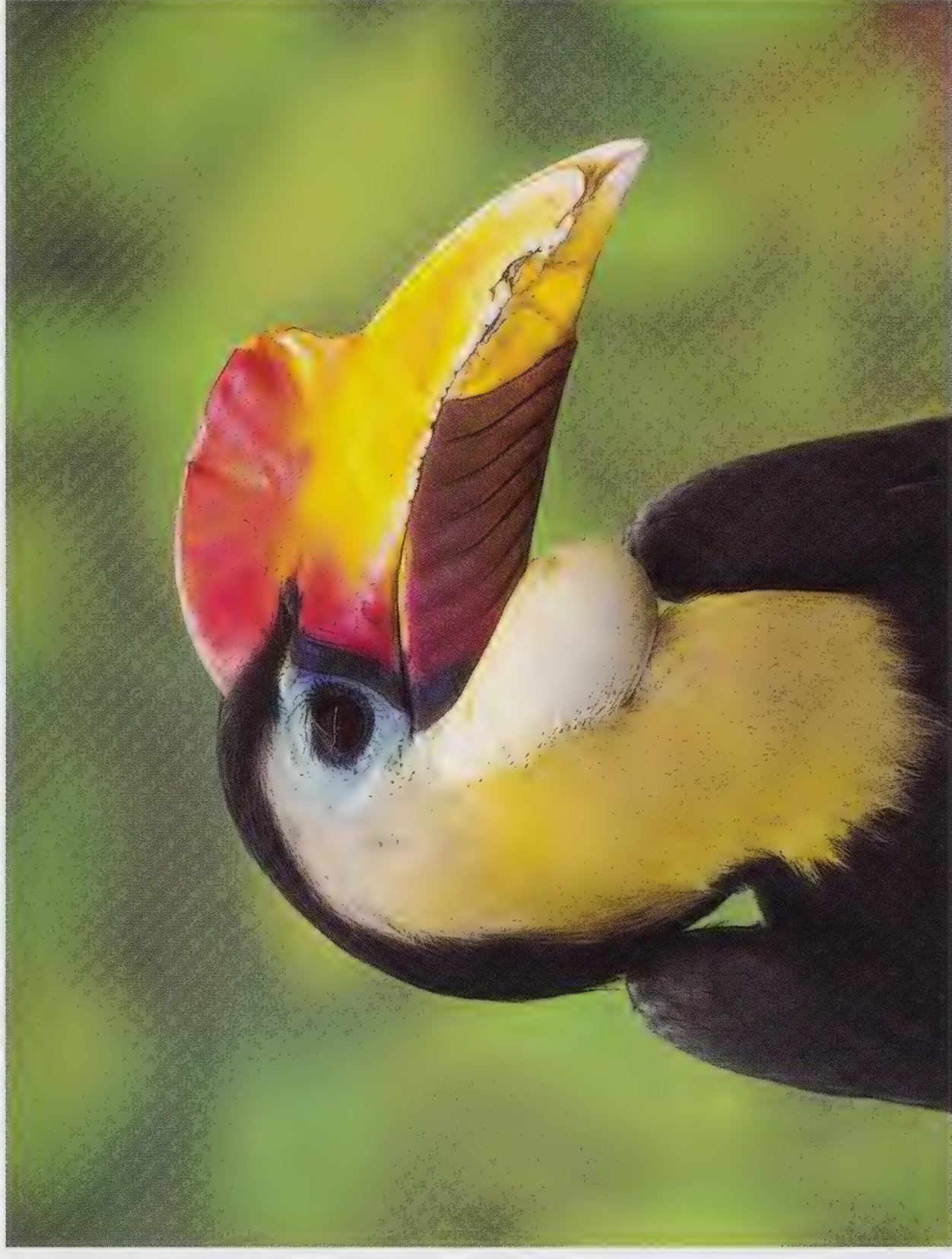
FONZ | FRIENDS OF THE NATIONAL ZOO



From black-and-white
giant pandas to bright-
pink flamingos, the
world is filled with an
immeasurable wealth of
beautifully diverse animals.

the BEAUTY of the BEASTS

With your 2016 Friends of the National Zoo wall
calendar—a benefit of FONZ membership—we
bring you 12 of the biggest, fastest, and most
colorful animals to be found at the Smithsonian’s
National Zoo. Each animal is a wonder in itself,
and combined they offer just the briefest of
introductions to the incredible diversity of our
wild world.



Thank You for Being a Friend

Membership with Friends of the National Zoo brings you and your family many benefits, the greatest of which is the knowledge that your membership is helping save species here at the Smithsonian's National Zoo and around the world.

Thanks to the support and contributions of members like you, Friends of the National Zoo is able to provide the Zoo with essential support annually to care for the animals at the Zoo, further research at the Smithsonian Conservation Biology Institute, and save species around the world. Over the years, your support has helped fund exhibits, enhance the Zoo, and expand educational opportunities.

FONZ exists to support the Zoo. We couldn't possibly do what we do without your support.

Thank you.

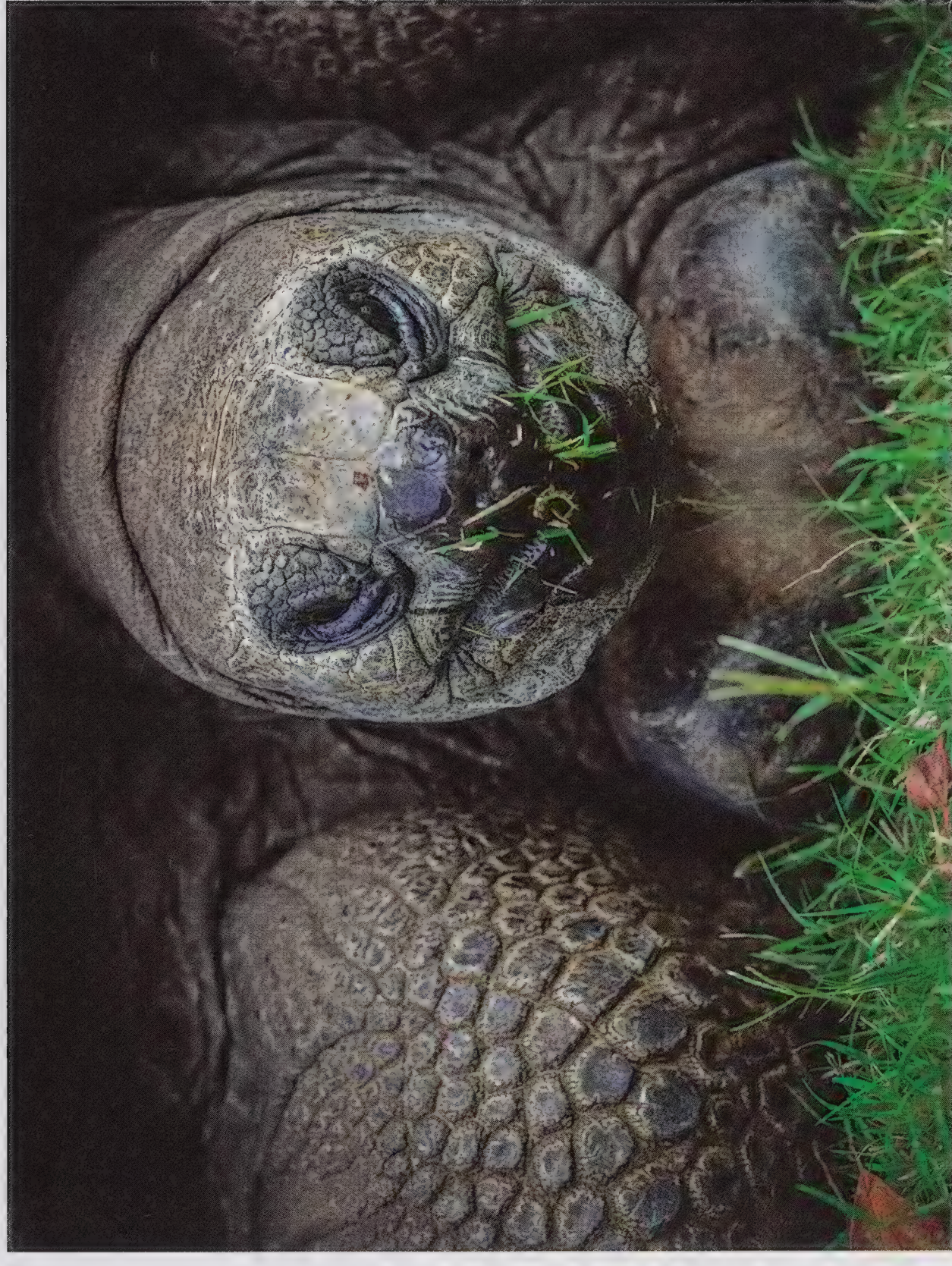
Throughout this calendar, you'll find dates marked for special FONZ events, including early registration offers for camps, classes, and other FONZ programs. View the back cover of this calendar and visit fonz.org/benefits for more information about your member benefits.

Yet, of the twelve species featured within this calendar, eight are threatened with extinction. That number climbs far higher when we consider all the species found at the Zoo, throughout the United States, and around the world. Habitat loss, climate change, invasive species, and many other human-caused threats push species over the edge of extinction every year.

The Smithsonian's National Zoo is a leader in the global battle against these extinctions. Zoo scientists pioneered the technology to breed black-footed ferrets in captivity, leading to the reintroduction of this once extinct-in-the-wild species to American prairies. In China, Zoo biologists collaborate with their Chinese colleagues to better understand and protect giant pandas. And from South America to northern Africa and beyond, researchers from the Zoo observe wildlife, investigate disease, track changes in forests and plains, and tackle any number of conservation questions, the answers to which may help save countless species from extinction.

This is where you—the members of Friends of the National Zoo—can help. When you join Friends of the National Zoo, you join forces with more than 35,000 other families and individuals who differ in any number of ways except one—a shared commitment to help save the many species with whom we share our planet.

Together, your support helps further this species-saving work. Together, we save species.



Thank You

for being a friend to the
Smithsonian's National Zoo
and all the world's wildlife.



Thank you to HBP, Inc., which prints and generously sponsors this calendar and *Smithsonian Zoogoer* magazine.



RED-RUFFED LEMUR

Varecia rubra

SMALL MAMMAL
HOUSE

Like all lemurs, the red-ruffed lemur is native to the African island nation of Madagascar. It is the only primate in the world to give birth to litters of two to six young—all other primates bear one or two babies at a time. The babies are born fully furred and with their eyes open, but because they are not strong enough to cling to their mother at birth, they typically stay hidden in a nest until they are seven weeks old.

**CRITICALLY
ENDANGERED**

JANUARY 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<div>From toddlers to teenagers, children learn about, explore, and discover the natural world at the Zoo and the Smithsonian Conservation Biology Institute with Safari Day Camps and Nature Camps. Register starting January 26 to guarantee an unforgettable experience for your wild child. fonz.org/camps</div> <div>Wild child!</div>				<div>The calendar for members of FONZ FRIENDS OF THE NATIONAL ZOO</div>	NEW YEAR'S DAY ZooLights fonz.org/zoolights	ZooLights fonz.org/zoolights
3	4	5	6	7	8	9
10	11	12	13	14	15	16
	MARTIN LUTHER KING, JR. DAY					
17	18	19	20	21	22	23
24	Safari Day Camps and Nature Camp registration opens for Premier+ members. fonz.org/camps Upgrade your membership at fonz.org/join to be eligible		27	28	29	30
31						

December 2015

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February 2016

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21	22	23	24	25	26	27
28	29					



AMERICAN FLAMINGO

*Phoenicopterus
ruber*

BIRD HOUSE

There's no mistaking flamingos, with their long legs, distinctive bills, and bright pink feathers. But, unlike most animals, their coloration isn't guaranteed by genetics. Instead, they gain their flamboyant shade of pink from their diet—shrimp, algae, and other small aquatic plants and animals—which is rich in red-hued pigments called carotenoids. Flamingos capture their tiny prey by filtering water through filaments—called lamellae—in their beaks.

Flamingos are the most specialized of filter-feeding birds, but some ducks and seabirds also collect their meals this way.

FEBRUARY 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
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28	29					

Safari Day Camps and Nature Camp registration opens for all FONZ members. fonz.org/camps

VALENTINE'S DAY

PRESIDENTS' DAY

January 2016

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March 2016

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27	28	29	30	31		

Maximize Your Membership

From birthday parties at the Zoo to special animal previews, your FONZ membership is your exclusive ticket to members-only clubs, events, programs, and more! Learn more about your benefits, sign up for email newsletters, join a club, and more—all online! fonz.org/benefits

The calendar for members of

FONZ

FRIENDS OF THE NATIONAL ZOO



SUMATRAN TIGER

*Panthera tigris
sumatrae*

GREAT CATS

Of all the great cats—a group that includes lions, leopards, and jaguars—tigers are the rarest. Scientists estimate that fewer than 4,000 tigers remain alive in the wild today. Of these, about 400 are the critically endangered Sumatran tiger, the island-dwelling subspecies that can be seen at the Zoo.

CRITICALLY
ENDANGERED

MARCH 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	<div>The calendar for members of FONZ FRIENDS OF THE NATIONAL ZOO</div>	1	2	3	4	5
		8	9	10	11	12
6	7	ZOO SUMMER HOURS BEGIN fonz.org/hours				
13	14	15	16	17	18	19
20	21	22	23	24	25	26
EASTER	EASTER MONDAY fonz.org/easter	Snore & Roar and Scout Snooze registration opens for Premier+ members. fonz.org/overnights Upgrade your membership at fonz.org/join to be eligible				
27	28	29	30	31	<div>Sleep With the Tigers Sign up for a wild night of camping and exploring the Smithsonian's National Zoo with Snore & Roar and Scout Snooze. Overnights may include keeper-led tours of the Zoo, evening activities, breakfast, and more. fonz.org/overnights</div>	

February 2016						
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April 2016						
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EYELASH PALM PITVIPER

Bothriechis schlegelii

REPTILE DISCOVERY
CENTER

Named for the spiny projections above their eyes, eyelash palm pitvipers are among the smallest of Central and South America's venomous snakes at just 2.5 feet in length.

Like all pitvipers, these arboreal—tree dwelling—snakes have small heat-sensing organs near their eyes. The organs look like small pits in the snake's face, and help the predator find its next meal by homing in on the body heat of its prey.

APRIL 2016

Kids' Farm Month
fonz.org/kidstarm

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<div>Join us for a month-long celebration of Kids' Farm, sponsored by State Farm®, and our generous members who helped save the exhibit in 2011. Celebrate another year of Kids' Farm fun with events for the whole family, including music, story time, animal demonstrations, and more. fonz.org/kidsfarm</div> <div>The calendar for members of FONZ FRIENDS OF THE NATIONAL ZOO</div>				2	1	
		Snore & Roar and Scout Snooze registration opens for all FONZ members. fonz.org/overnights	6	7	8	9
FRIENDS OF THE NATIONAL ZOO (FONZ) FOUNDED IN 1958	4		13	14	15	16
10	11	12			EARTH DAY	State Farm® Tend Your Garden Day fonz.org/tendyourgarden
17	18	19	20	21	22	23
					ARBOR DAY	
24	25	26	27	28	29	30

March 2016

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May 2016

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29	30	31				

A North American Porcupine is shown in its natural habitat, standing in a field of green grass. The porcupine's body is covered in long, dark brown fur, and its head is surrounded by a thick, light-colored mane. Its long, white quills are visible, extending from its back and head. In the background, a yellow informational sign is visible, providing details about the porcupine exhibit.

NORTH AMERICAN PORCUPINE

Erethizon dorsatum

PORCUPINE EXHIBIT
NEAR THE PRAIRIE
DOG EXHIBIT

From head to tail, a single adult North American porcupine may have more than 30,000 quills on its body. The quills—modified hairs with sharpened, barbed tips—provide ample reason for most predators to avoid this prickly prey. Even baby porcupines are protected. Their quills are soft at birth, but harden to a predator-deterrent sharpness within hours.

MAY 2016

May is
Members'
Month!

Join us for a month-long
celebration of you, our
wonderful members!
[fonz.org/
membersmonth](http://fonz.org/membersmonth)

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
MOTHER'S DAY						INTERNATIONAL MIGRATORY BIRD DAY
8	9	10	11	12	13	14
15	16	17	18	19	20	21
				ZooFari fonz.org/zoofari		
22	23	24	25	26	27	28
	MEMORIAL DAY					
29	30	31				

It's a Party to Roar About!
Fill your glass and load your plate with tasty treats at ZooFari,
the wildest party in D.C. Join the region's best restaurants and
vineyards for an evening of food, drink, and species-saving fun.
fonz.org/zoofari

The calendar
for members of
FONZ
FRIENDS OF THE
NATIONAL ZOO

April 2016

S	M	T	W	T	F	S
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June 2016

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GIANT PANDA

*Ailuropoda
melanoleuca*

DAVID M. RUBENSTEIN
FAMILY GIANT PANDA
HABITAT

Black and white and adored the world over, giant pandas are perhaps the most beloved and befuddling of bears. Unlike the majority of bear species—most of which have adapted to eat a widely varied diet of plants and animals—giant pandas subsist almost entirely on the leaves and stalks of bamboo. Even their appearance has been modified to suit their unusual diet—their charmingly rounded faces are due to the massive jaw muscles required to chew bamboo.

ENDANGERED

JUNE 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<div><div>Give Dad a Wild Father's Day</div><div>Skip the tie. Instead, give Dad a lion or tiger or giant panda bear for Father's Day with the FONZ Adopt a Species program. Various packages are available, and may include frameable paw prints, a full-color photograph, a plush of the adopted species, or all three. Proceeds support the Zoo's species-saving science around the world. fonz.org/adopt</div></div>			1	2	3	4
			WORLD OCEANS DAY			
5	6	7	8	9	10	11
12	13	14	15	16	17	18
FATHER'S DAY						
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May 2016

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JULY 2016

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FISHING CAT

Prionailurus viverrinus

ASIA TRAIL

Tigers are well known for their willingness to swim and play in the water, but fishing cats do them one better:

These water-loving felines actually fish for their supper. The cats use their short, flat tails and webbed feet to guide their bodies through the water, and will even dive beneath the surface to capture

fishes and other aquatic creatures.

Despite their name, fishing cats also prey on snakes, birds, small mammals, and other animals.

ENDANGERED

JULY 2016

SATURDAY

FRIDAY

THURSDAY

WEDNESDAY

TUESDAY

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The calendar
for members of
FONZ
FRIENDS OF THE
NATIONAL ZOO

Drink Beer. Save Wildlife.
Fill your glass and toast the Zoo's species-saving science and education programs
with Brew at the Zoo, our annual celebration of beer, food, and conservation.
This popular event often sells out—reserve your tickets today! fonz.org/brew

INDEPENDENCE DAY

Brew at the Zoo
fonz.org/brew

INTERNATIONAL
TIGER DAY

June 2016

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				1	2	3
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August 2016

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28	29	30	31			



WESTERN LOWLAND GORILLA

Gorilla gorilla gorilla

GREAT APE HOUSE

Gorillas and their great ape relatives—chimpanzees, bonobos, and orangutans—are among the most intelligent of animals.

The apes create and use tools, can learn to communicate with sign language, and readily display emotion—laughing, grieving, and showing evidence of strong family ties. At the Zoo, the gorillas are regularly challenged with enrichment activities featuring puzzles, food, and even iPads.

**CRITICALLY
ENDANGERED**

AUGUST 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<div>The calendar for members of FONZ FRIENDS OF THE NATIONAL ZOO</div>	1	2	3	4	5	6
7	8	9	10	11	12 WORLD ELEPHANT DAY	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JULY 2016

S	M	T	W	T	F	S
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September 2016

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Grapes With the Apes
The event is September 1, but August is the time to reserve your tickets for Grapes With the Apes! Join the Zoo's apes and their keepers for an evening of wine tasting and exclusive after-hours access to the Great Ape House. Event includes tastings from a variety of local vineyards, a commemorative glass, live music, and more! fonz.org/grapesapes



SCARLET MACAW

Ara macao

BIRD HOUSE*

Grant wings to a rainbow, and a scarlet macaw may be the result. These colorful birds are one of 17 species of macaw—large parrot—found from Mexico through South America. The large and vocal birds are intelligent and sociable, often living in flocks of 10 to 30 or more birds. They use their powerful beaks to crack open fruits, nuts, and seeds.

* The Zoo no longer houses scarlet macaws, but visitors can see green-winged macaws at the Bird House.

SEPTEMBER 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<div><div><div>Andean bears, giant anteaters, and other creatures from South and Central America. You and your family will meet the animals' keepers, try your hands at arts and crafts, and enjoy an abundance of music, food, and more.</div><div>fonz.org/fiesta</div></div><div><div>iFiesta!</div><div>Celebrate Hispanic Heritage Month with the Zoo's Andean bears, giant anteaters, and other creatures from South and Central America. You and your family will meet the animals' keepers, try your hands at arts and crafts, and enjoy an abundance of music, food, and more.</div><div>fonz.org/fiesta</div></div><div>Grapes With the Apes fonz.org/grapesapes</div></div>						
	LABOR DAY			1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
ZooFiesta fonz.org/fiesta						
18	19	20	21	22	23	24
25	26	27	28	29	30	
The calendar for members of FONZ FRIENDS OF THE NATIONAL ZOO						

August 2016						
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**RÜPPEL'S
GRIFFON
VULTURE**

Gyps rueppellii

CHEETAH
CONSERVATION
STATION

Like most vultures, Rüppell's griffon vultures dine primarily on carrion. They soar high above the grasslands and arid plains of western and central Africa to find their meals, relying on their 7.5–8.5-foot wingspan to hold their 15–20-pound bodies aloft for up to six hours. Although their diet sounds unsavory, vultures are essential to a healthy ecosystem. By feeding on carrion, they clean the environment of carcasses that might otherwise spread disease to other animals.

ENDANGERED

OCTOBER 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<div>The calendar for members of FONZ FRIENDS OF THE NATIONAL ZOO</div> <div>Mountain Views and Endangered Species</div> <div>Venture into Virginia's countryside for the once-a-year opportunity to see endangered species, interact with SCBI's scientists, and explore the Smithsonian Conservation Biology Institute's species-saving science up close and face-to-face. fonz.org/acf</div>						
Autumn Conservation Festival fonz.org/acf	3	4	5	6	7	8
2	COLUMBUS DAY	10	11	12	13	14
9	16	17	18	19	20	21
Boo at the Zoo fonz.org/boo	23	24	Night of the Living Zoo fonz.org/nolz			
30	HALLOWEEN 31	25	26	27	28	29
1						Boo at the Zoo fonz.org/boo

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
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S	M	T	W	T	F	S
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20	21	22	23	24	25	26
27	28	29	30			



ASIAN ELEPHANT

Elephas maximus

ELEPHANT TRAILS

Like their larger African relatives, Asian elephants use their trunks as an all-purpose tool. Their super-size nose

is unique among all animals, and can be used for breathing and blowing, lifting, rolling, and manipulating.

Elephants' trunks are strong enough to uproot trees, but gentle enough to pick a single flower. And, when the urge for a bath strikes, elephants can use their trunks to suck up water or sand and then blow it over their bodies.

ENDANGERED

NOVEMBER 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	<div>The calendar for members of FONZ FRIENDS OF THE NATIONAL ZOO</div>	<div>2016 Birthday Parties and Winter Camp registration opens for all FONZ members. fonz.org/birthday fonz.org/camps</div>	2	3	4	5
DAYLIGHT SAVING TIME ENDS (set clocks back one hour)		ELECTION DAY			VETERANS DAY	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
				THANKSGIVING DAY	<div>ZooLights begins and continues through the holiday season. Check online for exact dates. fonz.org/zoolights</div>	
20	21	22	23	24	25	26
27	28	29	30	<div>The Gift of FONZ Wrap up a year of Zoo fun with this one-of-a-kind gift for the animal lovers in your life. Your recipients receive a full year of members-only benefits and fun, including special access to members-only events, discounts on classes and camps, the <i>Smithsonian ZooGoer</i> magazine and wall calendar, and free or discounted parking at some membership levels. fonz.org/gift</div>		

October 2016						
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30	31					

December 2016						
S	M	T	W	T	F	S
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4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

CHEETAH

Acinonyx jubatus

CHEETAH CONSERVATION STATION

No land animal is better built for speed than the cheetah.

The sleek cat can accelerate from 0 to 45 miles per hour in less than three seconds, has an estimated maximum speed of 64 miles per hour, and can cover more than 20 feet in a single stride. Its long legs provide speed while its tail serves as a rudder, helping the cat steer through dramatic turns as it chases down its prey.

VULNERABLE



DECEMBER 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<div><div><div>Make your holidays bright with a visit to Zoolights, powered by Pepco, at the Zoo. Enjoy light displays lit by more than 500,000 LED bulbs, visit with the animals, sample tasty treats, take a ride in a snow tube, and more! Special nights include BrewLights—a night of beer tasting and light gazing—two date nights, and a full week of FONZ member nights. fonz.org/zoolights</div><div><div>Bright Nights</div><div>The calendar for members of FONZ FRIENDS OF THE NATIONAL ZOO</div></div></div></div>				<div><div>Zoolights continues through the holiday season. Check online for exact dates. fonz.org/zoolights</div><div>1</div></div>	<div>2</div>	<div>3</div>
				<div><div>BrewLights</div><div>fonz.org/brewlights</div></div> <div>8</div>	<div>9</div>	<div>10</div>
				<div><div>Zoolights Date Night</div><div>fonz.org/zoolights</div></div> <div>15</div>	<div>16</div>	<div>17</div>
						<div>Zoolights closed</div>
				<div>22</div>	<div>23</div>	<div>24</div>
<div>CHRISTMAS Zoo and Zoolights closed</div>			<div>ENDANGERED SPECIES ACT PASSED IN 1973</div>			<div>NEW YEAR'S EVE Zoolights closed</div>
<div>25</div>	<div>26</div>	<div>27</div>	<div>28</div>	<div>29</div>	<div>30</div>	<div>31</div>

November 2016						
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27	28	29	30			

January 2017						
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29	30	31				

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Learn more about your benefits: fonz.org/benefits

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Whether it's day camp at the Zoo or sleep-away camp at the Smithsonian Conservation Biology Institute, students from elementary through high school are invited to sign up for adventure during spring, summer, and winter school breaks.

fonz.org/camps

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OVERNIGHTS

Pack your sleeping bag and pitch a tent at the Zoo for a night of camping unlike any other.

fonz.org/overnights

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fonz.org/events

VOLUNTEER

From caring for the animals to working alongside scientists, the Zoo and Smithsonian Conservation Biology Institute offer a wealth of opportunities for FONZ volunteers. Learn more and sign up today.

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**Benefits vary with membership level and/or specific program:
fonz.org/benefits*

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Thank you for your support.

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EDITOR/WRITER: Cristina Santestevan; DESIGN: 2farthings.design

A photograph of a rocky landscape. In the foreground, there are large, light-colored, layered rocks. In the background, there are green plants, including some tall, thin stalks and some leafy branches. The overall scene is outdoors and appears to be a natural habitat.

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The Zoo's Komodo dragon, Murphy, is one of the most popular animals at the Reptile Discovery Center.

**COLD BLOOD, SHARP FANGS,
ROUGH SCALES,
AND BEAUTIFUL CREATURES.**

THERE BE dragons HERE

BY KATHARINE SUCHER

Stepping into the Reptile Discovery Center is like entering into a prehistoric fantasy where dragons mingle with dinosaur look-alikes and animals of legend and imagination.



MEHGAN MURPHY/NZP

The Reptile Discovery Center (RDC) is located off Olmsted Walk—between the Great Ape House and Think Tank—where giant tortoises can be seen grazing in their outdoor exhibit on warm and sunny days. These dino-like animals, in addition to the painted stegosaurus that marks the entryway to the RDC, hint at the ancient and awe-inspiring spirit that waits inside.

You won't find any fuzz or feathers at the RDC. These cold-blooded animals are all about scales and shells. And that's part of what makes visiting the RDC so fun. "Reptiles have this weird, freaky, oooh factor—and a lot of times that's what draws people in," RDC biologist Matthew Evans says.

RDC animal keeper Lauren Augustine agrees: "One of the most exciting things about cold-blooded animals is that they're so different from us as people."

And they are. From lizards that walk on water to salamanders that breathe through their skin, the residents of the RDC are full of surprises worth exploring. As Evans says, "The RDC gives you that element of the unknown."

MEHGAN MURPHY/NZP

THERE BE dragons HERE



MEGHAN MURPHY/NZP



CONNOR MALLON/NZP



MEGHAN MURPHY/NZP



JESSIE COHEN/NZP



LAUREN AUGUSTINE/NZP



LAUREN AUGUSTINE/NZP

Cold Blood Out Back

One of the RDC's most popular residents doesn't actually live in the RDC. Murphy—the Zoo's 17-year-old male Komodo dragon—can be found behind the RDC, either in his toasty greenhouse or sunning in his outside yard across from the butterfly garden.

Augustine says the Komodo dragon is “an iconic species” for the RDC. In 1992, the National Zoo became the first institution to hatch Komodo dragons outside of their native range of Indonesia—an important conservation victory for the animal, which is vulnerable to extinction.

Although Evans says some people come to the RDC specifically to see Murphy, most aren't prepared for the sight that awaits them. “Even though people have seen Komodos in documentaries or on TV, seeing a nine-foot lizard up close is something else,” he explains. “People are constantly surprised by how big he is.”

Also to be seen behind the RDC is a lesser-known reptile named Pip. Pip is a *Tomsistoma*—one of the first to be successfully hatched in the United States. Also known as the false gharial, this endangered crocodilian bears a striking resemblance to the gharial, another crocodilian that can be seen inside the RDC.

Augustine says that even though many people have never heard of a gharial, they are drawn to them because of their unusual looks. “They have these big buggy eyes on top of their head and this long skinny snout. They look like rubber aliens,” Augustine laughs. “People are always thinking they're fake.”

Creepy or Cool?

Inside the entrance of the RDC, a very recognizable group of reptiles lines the left-hand aisle: snakes.

According to Augustine, people tend to have strong reactions toward snakes. “People are always saying, ‘I hate snakes’ or ‘ew, look at that snake,’” she says. “There are a few people who love them, but it's mostly negative.”

Evans elaborates: “People think turtles are cute and people love frogs, but there is this real hatred towards snakes. People are scared of them for no real reason, which is sad because they're such an interesting and diverse group.”

The RDC makes it a point to showcase this diversity. Consider the Everglades rat snake—one of the first snakes you'll see in the RDC. This orange-eyed snake is a skilled swimmer and tree climber. Compare that to the northern pine snake, which lives a few exhibits to the right and prefers to spend most of its time hidden underground. Featured farther inside the RDC are unusual tentacled snakes, which live their entire lives in the water, and the venomous copperhead.

But one of the most popular snakes in the RDC is the green anaconda—the heaviest snake in the world. Native to swamps and marshes in northern South America, the green anaconda can grow to more than 20 feet long. A constrictor, this snake overpowers its prey by squeezing it to death—and then swallowing it whole. Anacondas regularly prey on birds, deer, and wild pigs, and have even been known to eat jaguars.

While not all snakes featured in the RDC eat such large prey, even snakes that feast on small animals can make a big difference. Evans explains that snakes play an important role in controlling mouse and other rodent populations. “Snakes have their place in the ecosystem,” he explains. “They're just as important as any other species.”

Stayin' Alive

Unlike the green anaconda, not all reptiles sit comfortably at the top of the food chain. Across from the anaconda are some lizards that demonstrate pretty remarkable—and surprising—survival strategies. Take the northern blue-tongued skink, for example. When fleeing danger, the blue-tongued skink can sever its own tail. Once detached, the tail continues to wriggle, distracting would-be predators while the skink scurries to safety. Eventually,



FACING PAGE, CLOCKWISE FROM TOP RIGHT: The Reptile Discovery Center is home to an incredible diversity of reptiles and amphibians, including green-crested basilisks, northern pine snakes, Madagascar spider tortoises, giant leaf-tailed geckos, a green anaconda, and Aldabra giant tortoises.

THERE BE dragons HERE

the lizard will grow a new tail, although the replacement is no longer detachable.

Farther down the hall is the green crested basilisk. Despite its name, this lizard shares little in common with the monster-sized basilisk of *Harry Potter* fame. In fact, the green crested basilisk only grows to weigh around seven ounces, approximately half a pound. In its tropical rainforest habitat, that makes this green member of the iguana family a tempting meal for many snakes, birds, and other predators.

To avoid becoming another animal's lunch, the green crested basilisk can run on its hind legs at speeds reaching seven miles

Plan—Augustine says this reptile is “one of the most overlooked in the building.”

Part of that may have to do with the gecko's survival strategy: camouflage. The leaf-tailed gecko gets its name from its ability to blend in to tree bark and leaves. Explains Evans, “They can be hard to find in their exhibit because they're nocturnal and during the day they hang their body in positions where they literally look like a dead leaf.”

For those willing to take the time, looking for the leaf-tailed gecko can be a fun challenge. And Evans says the reward is worth the effort: “When you see one, you realize that they're really fascinating.”



Cuban crocodiles are critically endangered. The Zoo is home to four adult Cuban crocodiles, and recently celebrated the hatching of five babies.

JESSIE COHEN/NZP

per hour. But that's not the most surprising thing about this cold-blooded animal: Specialized scales on the bottom of their feet allow these lizards to run across the surface of the water for distances up to 32 feet. The green crested basilisk's ability to literally walk on water has earned it the fitting moniker: Jesus Christ lizard.

Another RDC resident with an unexpected survival strategy is the leaf-tailed gecko, native to Madagascar. Despite its odd appearance and conservation significance—the Zoo breeds leaf-tailed geckos for the Association of Zoos and Aquariums' leaf-tailed gecko Species Survival

New Arrivals

When it comes to the survival of entire reptile species, breeding plays a critical role in conservation efforts. The RDC is an active participant in many conservation-breeding efforts—and that means there are often many reptile babies to see.

Zoo guests can currently see two spider tortoise hatchlings—the first to hatch at the National Zoo—in an exhibit on the right side of the building, near the crocodiles. These hatchlings are special not just because they're adorable—the tiny tortoises can fit in the palm of your hand—but because they represent an important conservation milestone.

Due to habitat loss and wildlife trafficking in their native Madagascar, spider tortoises are critically endangered. Since 1970, their populations have declined by a staggering 80 percent. To make conservation matters more difficult, Augustine describes hatching spider tortoises as “very challenging.”

Spider tortoises only lay one egg at a time, and only up to three times per year. Compare that to many other turtles and tortoises, which may lay dozens of eggs per clutch. In addition, spider tortoise eggs must be gradually heated, cooled, and reheated over a period of several weeks during incubation. This tricky process, which mimics natural conditions, makes the spider tortoise hatchlings all the more impressive and exciting.

In a few months, Zoo guests may also be able to see another critically endangered hatchling on display—the Cuban crocodile. Five hatched at the Zoo this summer. It was what Evans describes as “the best success the National Zoo has had breeding Cuban crocodiles in decades.” The hatchlings are genetically valuable for conservation because their mother is wild-born and her genes aren’t well represented in the zoo population.

For now, the hatchlings are too small to go on display. And even in the future, Zoo guests should only expect to see one or two, and only individually. Cuban crocodiles are notoriously aggressive, and even the babies may pick fights with each other.

In the meantime, people can still delight in watching the Zoo’s five adult Cuban crocodiles on display, where, according to Evans, “everything happens on exhibit.” The crocs breed, nest, and even lay their eggs right on exhibit along the back wall of the RDC.

Beyond Reptiles

Despite its name, the RDC is home to more than just reptiles. Amphibians call the RDC home too. Hop across from the Cuban crocodiles, and you can see some of the RDC’s more colorful residents: frogs.

One of the most striking frogs in the RDC is the Panamanian golden frog. Evans calls it “a flagship species” for the Zoo. Panamanian golden frogs are feared to be extinct in the wild—no one has recorded seeing one since 2008—but the National Zoo participates in a Species Survival Plan that breeds these frogs for conservation.

In addition to their bright yellow color and conservation significance, the Panamanian golden frog is a favorite among Zoo guests for its sleep schedule. Unlike many frogs in the RDC, Panamanian golden frogs are diurnal—meaning they’re active during the day and can often be seen hopping around their exhibit.

Near the RDC’s exit, visitors can see another group of amphibians—salamanders—in their new exhibit. The RDC even has its own salamander research lab with windows that allow visitors to watch science in action.

“The diversity of salamander species is just amazing,” says Augustine. In fact, the Appalachian region is home to more salamander species than any other place in the world.

The new exhibit features several species of lungless salamanders, which breathe entirely through their skin. For an interesting size contrast, visitors can also see the eastern hellbender—the largest aquatic salamander in North America—in the salamander research lab.

While Zoo guests are naturally drawn to the hellbender because of its size—it can grow up to three feet long—Augustine says, “We’re hoping for the new exhibit to get people excited about some of the smaller species as well.”

Warming Up to Cold Blood

Despite the amazing adaptations and conservation stories that wait inside, some people remain wary of the animals in the RDC. For every excited person that’s running between exhibits, Evans says, “there’s another person covering one eye and looking like they’re scared to death.”

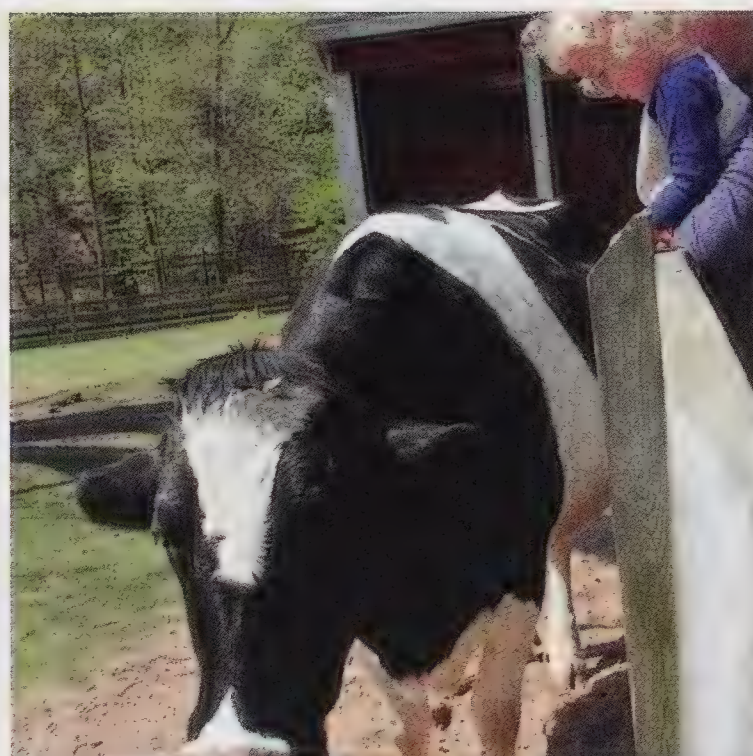
Eventually, however, the reptiles and amphibians of the RDC win over most Zoo guests.

“No matter what mindset they come in with, people become fascinated with the animals inside,” Evans says. “Everyone leaves the RDC glad they came and with a better appreciation for the animals they’ve seen. **SZ**

—KATHARINE SUCHER is a former Smithsonian’s National Zoo intern and a freelance science writer.



*"We make at least
three trips to the eagle
every time we visit!"*



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BEAST BITS

Dedicated Daddy

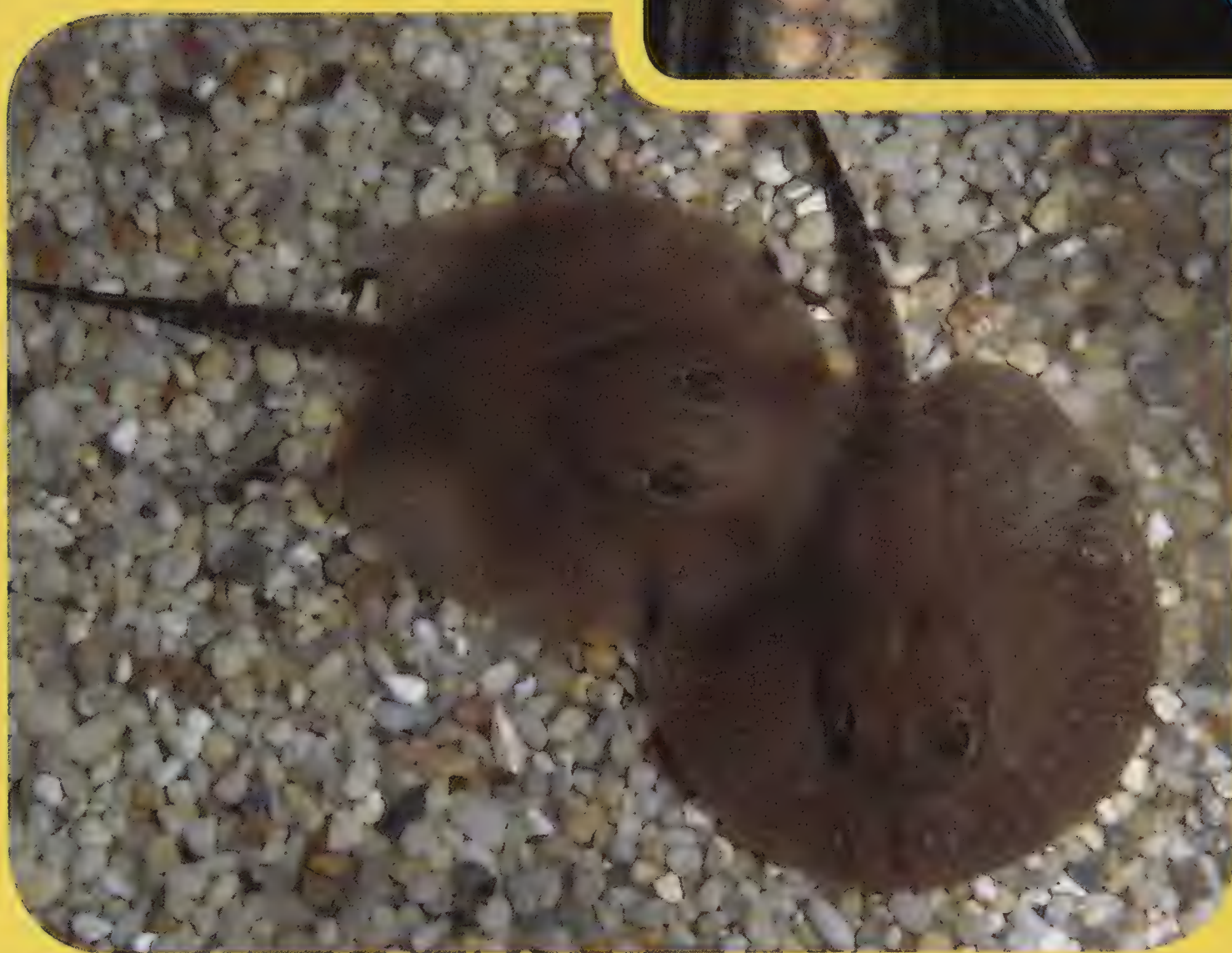
When twig catfish breed, the mother lays 30-60 eggs and then leaves them entirely in the care of her partner. The proud papa guards and cleans the eggs, and then helps the baby fish hatch.



MEHGAN MURPHY/NZP

Fun Fact

Baby fishes are called "fry," and are sometimes so small that you could barely see them without a magnifying glass!



JESSIE COHEN/NZP

Polka-Dotted Pups

Most fishes in the world lay eggs, but some give birth to live babies. The freshwater stingray is one of those unusual fishes. The mother gives birth to as many as a dozen or more babies—called pups—at one time.

iStock





**CREATURE
FEATURE**

Dazzling DISCUS

With their dish-like shape and bold colors, discus are stunning and surprising fish.

CRISTINA SANTIESTEVA

SMITHSONIAN zoogoer kids CORNER

DESSERT Sized

Discus get their name from their dish- or disc-shaped bodies, which grow to be about six to ten inches long—just about the same size as a dessert plate!

PROTECTIVE Parents

Discus are a kind of cichlid, a group of freshwater fishes found throughout the world that are generally attentive and protective parents, guarding their eggs and young—called fry—until they are accomplished swimmers and better able to hide from predators.

FISHY Feast

Discus nibble and snack all day long. Some of their favorite foods are insect larvae, aquatic bugs, and other tiny, bite-size creatures.

Stunning CAMOUFLAGE

It's easy to see that discus are pretty fish, with bold colors and patterns. But their beauty serves a very important purpose—it helps protect them from larger fishes, birds, and other animals that would like to eat them! Discus' coloration blends well with underwater plants, and their tall, slender shape makes them difficult to see from above.

Southern BEAUTIES

These pretty fish live in only one place in the whole world—the Amazon River Basin in South America. There, discus swim in the slow-moving waters of the Amazon River and its tributaries, and often hide among the many underwater plants, tree roots, and submerged branches.

Charismatic CICHLID

Most cichlids are aggressive and territorial, and each male-female pair will protect their home range from others of their same species. But discus are different. These social fish often swim and live in large groups called schools, only breaking off on their own when it is time to lay eggs and raise babies.

BABY Food

Discus feed their babies an unusual food—their own skin mucus! It sounds gross, but both parents produce a specialized slime that provides their babies with exactly the nutrients they need. The baby fish eat the slime off their parents' bodies until they are large enough to hunt other prey.

Swimming JEWELS

Want to see some cichlids for yourself? You can! Swim on down to Amazonia at the Smithsonian's National Zoo, where you can see many beautiful Amazonian cichlids in their aquarium exhibit below the Zoo's rainforest.

Troubled Waters



The Amazon River Basin—where discus live—stretches through Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela in northern South America. Although discus are not threatened, their home in the Amazon Rainforest is at risk from the cutting down of too many trees. People can help protect discus and their neighbors by supporting rainforest conservation.

FONZ

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CRISTINA SANTISTEVAN



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Safari Day Camp invites kids in or entering grades K-7 to explore the lives and conservation of animals around the world with daily excursions and activities at the Smithsonian's National Zoo. Each week-long session includes hands-on activities, craft projects, science experiments, and guided walks through the Zoo.

All camp sessions are grouped by grade level. Spring campers should register for their current grade level, while summer campers should register for the grade level they will be entering in fall 2016.

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>> Registration for all FONZ members begins February 2 at 10 a.m.
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>> Registration for non-members begins February 9 at 10 a.m.

Learn more and register online: fonz.org/safari2016

NEED AN EARLY DROP-OFF OR LATE PICK-UP? Regular drop-off for all Safari Day Camps is at 8:45–9 a.m. and pick-up is at 3 p.m. Limited space is available for Before-Camp Care (8–8:45 a.m.) and After-Camp Care (3–6 p.m.) for an additional fee. Space is limited. If you need an early drop-off or a later pick-up, we encourage you to register early at fonz.org/safari2016.

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* Safari Day Camp is offered in four-day sessions the weeks of Easter (March 29–April 1) and Independence Day (July 5–8). A reduced fee applies for these sessions.

Special thanks to the SunTrust Foundation for its generous support.

Summer Safari Day Camp is accredited by the American Camp Association.





CRISTINA SANTIESTEVEN

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2016 SAFARI DAY CAMP SCHEDULES Safari Day Camp is offered during the spring, summer, and winter school breaks. Each week-long session runs from 9 a.m. to 3 p.m., Monday through Friday, excluding holidays. Before- and after-camp care is offered on a limited basis.

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Put a spring in your child's step with FONZ's Spring Safari Day Camp at the National Zoo. Camps are offered in week-long sessions from March 21 through April 1.

Learn more, explore the camp listings, and register online:

fonz.org/springsafari2016

Two separate week-long sessions—register for one or both!

- >> March 21–25
- >> March 29–April 1
(no camp on Monday, March 28)

Summer Safari Day Camps

Make it a summer worth roaring about with FONZ's Summer Safari Day Camp at the National Zoo. Camps are offered in week-long sessions from June 20 through August 12. Accredited by the American Camp Association.

Learn more, explore the camp listings, and register online:

fonz.org/summersafari2016

Eight separate week-long sessions—register for one, two, several, or all eight!

- >> June 20–24
- >> June 27–July 1
- >> July 5–8 (No camp on Independence Day)
- >> July 11–15
- >> July 18–22
- >> July 25–29
- >> August 1–5
- >> August 8–12

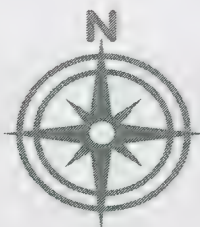
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Coast, *and your
child is invited.*

FONZ

2016 NATURE CAMP



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FONZ NATURE CAMP

Make it a summer of exploration, discovery, and wide-open spaces for your child.



istock

Through hands-on investigation, Nature Campers explore and discover local and global wildlife, conservation initiatives, research projects, and more.

Adventure awaits for students entering grades 5–10 with FONZ Nature Camp at the Smithsonian Conservation Biology Institute (SCBI) in Front Royal, Virginia.

Founded on the concept that what we do has an impact and makes a difference, FONZ Nature Camp reunites campers with nature through exploration of the outdoors. Campers identify local plants and animals, monitor biodiversity, observe ecosystems at work, and engage with leading Smithsonian scientists during daily behind-the-scenes tours and lectures.

FONZ Nature Camp is accredited by the American Camp Association (ACA) and is a past winner of the ACA Chesapeake Sections Environmental Education Program Award.

FONZ Members Save!

Enter **SCBI2016** at checkout to claim your discount.

DATES AND REGISTRATION

DATES Nature Camp is a sleep-away camp offered in three separate one-week sessions for campers entering grades 5–6 and 7–8, and one two-week session for campers entering grades 9–10:

>> **Entering grades 5–6:**
July 3–9

>> **Entering grades 7–8:**
July 10–16 and July 17–23

>> **Entering grades 9–10:**
July 24–August 6

REGISTRATION Camp sessions fill up quickly—register early to claim your child's spot.

>> Priority registration begins January 26 at 10 a.m.

Available to all current FONZ members at or above the Premier+ membership level. Upgrade your membership today to qualify for priority registration: fonz.org/join

>> Registration for all FONZ members begins February 2 at 10 a.m.

Available to all current FONZ members. Renew your membership today to ensure you will qualify: fonz.org/join

>> Registration for non-members begins February 9 at 10 a.m.

Learn more and register online: fonz.org/naturecamp2016

New Year, New Membership Opportunities

Here at FONZ, we are always working to improve our members' experiences at the Zoo and their impact on the Zoo's conservation efforts. Effective January 1, 2016, we will be updating our membership options at the level of \$250 and above to better serve those two goals. The next issue of *Smithsonian Zoogoer* will explain these changes. Additional information may also be found at fonz.org/membershipchanges starting January 1, 2016. In the meantime, watch your renewal notices for more information. We appreciate your support in helping us advance the conservation mission of the Smithsonian's National Zoo.

Welcome New FONZ Board Members

Congratulations and welcome to our new Friends of the National Zoo board members: Larry Hanauer, Cindy Lewin, and John Mina. We'd like to extend a fond farewell to departing board members Dave Grimaldi, Walter Jones, Tim Lynch, Laura Monica, John Piper, John Ring (board chair), and Sheila Walcoff. Thank you all for your service. The FONZ board of directors officers for 2016 are Karen Silberman (chair), Pete Smith (vice chair), Bryan Sivak (treasurer), and Carin Levine (secretary).

Statement of Ownership—
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\$8 of membership dues goes to subscriptions.

	AVERAGE FOR EACH ISSUE	ISSUE NEAREST TO FILING DATE
Net press run	35,386	35,825
Paid outside-county subscriptions	33,761	33,248
Paid in-county subscriptions	0	0
Sales through carriers, counter sales	0	0
Other classes of USPS mail	48	36
Paid electronic distribution	662	662
Total paid/requested circulation	34,414	33,889
Free distribution by mail	0	0
Free distribution outside mail	1,467	1,520
Total free distribution	1,467	1,520
Copies not distributed	101	1,021
Total distribution	35,938	35,466
Percent paid/requested circulation	97%	95%



GIVE THE GIFT OF ANIMALS

Share your holiday spirit by giving the gift that helps save wildlife. The animal lovers on your list will enjoy knowing that their present helped fund animal care, conservation, and wildlife preservation at the National Zoo and around the world. They'll also love the perks that FONZ membership has to offer, like free parking, member-only viewings and exhibit previews, discounts on shopping and event tickets, and more! **Do all of your holiday shopping today at fonz.org/gift.**

FONZ CLASSES

Learning is WILD at the National Zoo!

FONZ classes use hands-on activities, crafts, and the Zoo's animal collection to help your child learn about environmental conservation and life science while strengthening important developmental and social skills. Whether you prefer a regular weekly experience with your child or a one-time event for the family, you are sure to find a class to suit the needs of your young animal lover. All 2015-2016 class series are now open for registration!

Classes do not include behind-the-scenes visits or direct contact with the animals, but do use pelts, bones, feathers, and other touchable artifacts. For everyone's safety and enjoyment, unregistered children may not attend, with the exception of non-crawling infants.



WEEKEND FAMILY PROGRAMS

(ages 2–8, varies by program)

These one-time classes are designed for children and their parents to enjoy together! Interactive stations introduce participants to animals and concepts, while a hands-on discussion gets you ready to visit the animals of the day! Details online: fonz.org/classes

Weekend Family Programs meet Saturdays or Sundays from 10–11:30 a.m. or 1–2:30 p.m. See class listings for specific dates.

Meerkat Mania (ages 2–3)

January 10

Dig into learning with the Zoo's friskiest family: our mob of meerkats!

Creepy Crawlies (ages 3–5)

January 17

Not every Zoo animal is cute and cuddly! Learn why being scaly, slimy, or even stinky isn't scary, it's spectacular!

Just Like Me: Super Senses (ages 2–3)

January 24

Just like you, animals use their senses to explore the world. Look, listen, smell, and touch as we learn about some super-sensory species!

Hello, Kitty! (ages 2–3)

January 31

The National Zoo is full of cool kitties and furry felines. Discover what makes these cats so purr-fect.

Wild Kratts (ages 4–5 and 6–8)

February 7

Grab your creature power suit; we've got a special Zoo mission to learn about some animals with real creature power technology.

Panda-monium (ages 2–3 and 3–5)

February 13, 14, or 21

Pandas may be black and white, but they are pretty colorful characters. Explore the world of the Zoo's most famous family!

Register Today!

All 2015-2016 class series are open for registration! Additional weekend classes will be added as they become available. See detailed descriptions and register online: fonz.org/classes

CLASS SERIES

FONZ Member: **\$150**
Non-member: **\$187.50**

Use code **PANDA2016** to claim your member rate: fonz.org/classes

WEEKEND CLASSES

FONZ Member: **\$28 per child**
Non-member: **\$35 per child**

FONZ MEMBERS SAVE!
Use code **PANDA2016** to claim your FONZ member discount!

CLASS SERIES (ages 2–5, varies by class)

Classes meet once a week for five weeks. Children learn about animals and the natural world while strengthening important academic, developmental, and social skills. Details and full class list online: fonz.org/classes

>> TADPOLES (ages 2–3)

Classes meet one morning per week: M–F at 10–11:30 a.m., or Saturday at 9–10:30 a.m.

Coats of All Kinds

(4-weeks: \$120 for FONZ members)
January 11–February 6
We put on jackets and coats when we go out in the cold, but our animal friends wear them all year long. Fur, feathers, scales, and more are right at your fingertips!

Colorful Creatures

February 15–March 19
The National Zoo is home to some colorful characters! Explore all the colors of the rainbow and understand how animals use these colors to survive.

>> FROGS (ages 3–5)

Classes meet one afternoon per week: Tuesday or Wednesday at 1–2:30 p.m.

Fairy Tails

(4-weeks: \$120 for FONZ members)
January 12–February 3
Jump into the pages of your favorite "tails," from the three bears to the Big Bad Wolf! Join us as we learn about the real animals behind the critter characters!

Monkey Business

February 16–March 16
A little bird told us that we'll have the lion's share of fun in this class! Meet the animals that play a part in some of our most popular expressions.

HOMESCHOOL CLASS SERIES

(ages 5–8 and 6–12)

Each class meets once a week for five weeks and explores a different major category of animal adaptation. Hands-on science experiments, inquiry-based learning, and Zoo walks led by our expert teachers bring these concepts to life. Details online: fonz.org/classes

Classes meet Mondays or Thursdays at 10–noon.

Survival of the Fittest

January 11–February 11

To survive in the wild, animals need skill, strength, smarts, and a little help from natural selection. We'll trace the evolutionary history of some of our favorite adaptations, from the beautiful and broad to the specific and strange.

Eat or Be Eaten

February 12–March 24

In the animal world, someone always wants to have you for dinner! We'll investigate the variety of adaptations driven by an animal's place in the food chain. Defensive mechanisms, evasive tactics, predatory behaviors, feeding strategies: it's all on the menu!

FONZ Members Save 20%

Registering before January 1, 2016?

Enter **BISON2015** at checkout to claim your discount.

Registering after January 1, 2016?

Enter **PANDA2016** at checkout to claim your discount.



JANICE SVEDA/FONZ PHOTO CLUB

SPECIAL EVENT: HOLIDAY ZOO CRAFTS

ages 2-3: December 6 or 20
at 10-11:30 a.m.

ages 3-5: December 13 at 10-11:30 a.m.

all ages: Select evenings during
ZooLights; check fonz.org/zoolights
for schedule

You and your child will have zoo-dles of
fun making original animal-themed crafts
for the holidays while learning about
some of our favorite winter animals.

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another year of ghoulish fun!

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1. Stop worrying, we can help.
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at fonz.org/endofyear
3. Enjoy your deduction!



FOR ANIMAL LOVERS

DONATE ONLINE BEFORE DECEMBER 31, 2015, TO RECEIVE YOUR TAX DEDUCTION THIS YEAR.

Friends of the National Zoo (FONZ) is a 501(c)3 nonprofit organization, and your donation is tax deductible to the fullest extent of the law.



ZooVIEW



JIM AND PAM JENKINS/FONZ PHOTO CLUB



JIM AND PAM JENKINS/FONZ PHOTO CLUB

Bathing Beauty

It was a matter of being in the right place at the right time—for husband and wife photographer duo, Jim and Pam Jenkins. The two, both FONZ Photo Club members, just happened to be in the Bird House’s indoor flight room when a keeper started giving this blue-crowned motmot a shower.

“We noticed several head shakes every minute or so and started playing with timing and camera adjustments,” says Jim Jenkins. “It took about 10 minutes or so, but with a bit of luck we got a few shots.”

Technical Notes —

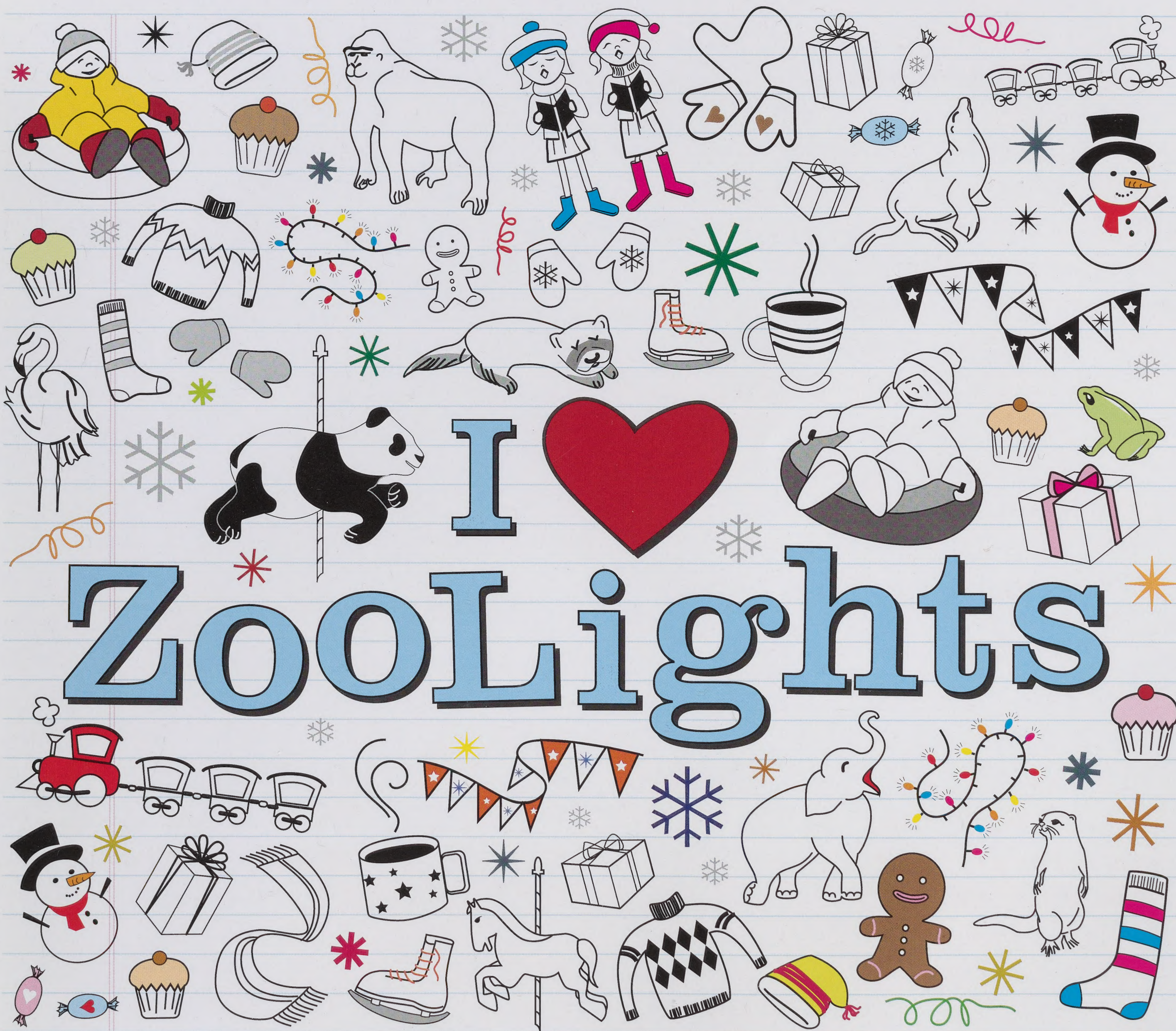
CAMERA: NIKON D810; LENS; ISO: 1600; EXPOSURE: 1/1250 SEC AT F4



JIM AND PAM JENKINS/FONZ PHOTO CLUB

Share Your Photos! Smithsonian Zoogoer welcomes FONZ members’ submissions of photos taken at the Zoo. Please send photos to Zoogoer@si.edu or post to @FONZNationalZoo on Twitter and Instagram, or @FriendsoftheNationalZoo on Facebook. Your photo may be featured on the Zoo View page.

Join the Club! Membership in the FONZ Photo Club is open to photographers of all skill levels. The group meets monthly to hear guest speakers and to share and discuss members’ work. Learn more at fonz.org/photoclub.



Light up your holidays! Experience the magic of the Smithsonian's National Zoo lit up by over half a million twinkling, sculpted, and dancing lights. Plunge down "snowless" tubing tracks, take a whirl on the Speedwell Foundation Conservation Carousel, ride the National Zoo Choo Choo, enjoy hot cocoa and cider, and stop by the Visitor Center to see our famous gingerbread contest. This free event starts the day after Thanksgiving and runs through New Year's. **Visit fonz.org/zoolights.**

LEAD SPONSOR: PEPCO. Other sponsors include: 94.7 Fresh FM, Big Bus Tours, The Coca-Cola Company, Comcast, GEICO, Giant Food, NBC4, The Washington Post/KidsPost, and Washingtonian Magazine.

ZooLights
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Thank you for being a FONZ member.
Your membership supports animal care,
science, conservation, and more.



'tis the SEASON TO SAVE SPECIES



MAKE SOMEONE MERRY WITH AN ADOPT A SPECIES GIFT PACKAGE! This holiday season show that special someone how much you care with the gift that supports science, animal care, medicine, habitat improvement, and enrichment at the Zoo and around the world. Gift packages can include a plush animal, a photo, an adoption certificate, even a private exhibit tour! From the bald eagle to the giant panda—we have the perfect match for everyone on your list. **Order today at fonz.org/giftadopt.** Fa la la la la, la la, la la.